Mahajana Education Society (R.)
Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysore – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF BIOCHEMISTRY

UG ☑

PG ☐

NEP Syllabi for I and II Semester B.Sc. Biochemistry

2021-22

DEPARTMENT OF BIOCHEMISTRY

Motto

Science for Future

Vision

Improving knowledge of Science through innovation and research for Better Future

Mission

To provide a broad based fundamental knowledge of Biochemistry by creative research ideas and professional skills

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions -Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO5: Use of Modern Techniques/Tools – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO6: Impact of Science on Society – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning – Engage in the art of self-directed learning.

List of BoS Members

Sl No	Category	Name and Designation	Address for Communication	e-Mail & Mobile No.
1.	Chairperson	Ms. Ramie V Assistant Professor & Hod	Department of Biochemistry, SBRR Mahajana First Grade College, Autonomous Jaylakshmipuram, Mysore	ramyav.fgc@mahajana.edu.in 7760108585
2.	Nominee by the Vice Chancellor	Dr. Kemparaju K Professor	DoS in Biochemistry, Manasagangothri University of Mysore, Mysore.	kemparajuom@gmail.com kemparaj@biochemistry.unimysore.ac. 9945996543
3.	Two Experts from Other University	Mr. Haleshappa R Assistant Professor	Department of Biochemistry, Nrupathunga University NrupathungaRoad, Bangalore - 560001	haleshr222@gmail.com 9743896433
4.		Dr. Manjunath M S Assistant Professor & Hod	Department of Biochemistry, JSS College of Arts, Commerce and Science, Ooty Road, Mysore.	manju297382@gmail.com 9972023024
5.	One Person from Industry	Dr. Puneeth Kumar Managing Director	Azymus Lifescience Pvt. Ltd. Kellamballi industrial Area, KIADB ,Chamarajanagara	azymus.pharma@gmail.com 8971155575
6.	Alumnus	Ms. Pallavi Assistant Professor	Department of Biochemistry MMK & SDM College, MahilaMahaVidyalaya, Mysore	pallavimr1990@gmail.com 9538582629
7.	Member	Smt. Radhika P Assistant Professor	Department of Biochemistry, SBRR Mahajana First Grade College, Autonomous Jaylakshmipuram, Mysore	radhikap.fgc@mahajana.edu.in 9986585574

Course Structure (NEP 2020)

I Year B.Sc. Biochemistry

Discipline Specific Courses (DSC), Open Elective (OE)

L: Lecture; **T:** Tutorial; **P:** Practical

Course Code, Type and Title		Hours /week		Number of Credits (L:T:P)	Max marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P		C1	C2	C3		
I SEMESTER									
212169	DSC(1) Chemical Foundation of Biochemistry- 1	4	0	4 : 0 : 2 (6 credits)	20	20	60	2½ Hours	100
	DSC(1)LAB: Volumetric analysis-1	0	4		10	15	25	3 Hours	50
21OEBIC101	OE(1) Biochemistry in Health & Disease	3	0	3 : 0 : 0 (3 credits)	20	20	60	2½ Hours	100
II SEMESTER									
212269	DSC(2) Chemical Foundation of Biochemistry- 2	4	0	4 : 0 : 2 (6 credits)	20	20	60	2½ Hours	100
	DSC(2) LAB Qualitative & Quantitative analysis-2	0	4		10	15	25	3 Hours	50
21OEBIC201	OE(2) Nutrition & Dietetics	3	0	3 : 0 : 0 (3credits)	20	20	60	2½ Hours	100

DSC (1) Syllabus for B.Sc. Biochemistry (Basics and Honors)

Semester-I

Course Code : 212169		
	Theory	**Practical**
Course Title:	**DSC(1)-Chemical Foundations of Biochemistry-1**	**Volumetric analysis**
Total Course credits (L:T:P)(4:0:2)	**04**	**02**
Total contact hours	**56**	**56**
Hours of teaching /week	**04**	**04**
Formative assessment marks	**40**	**25**
Semester End Assessment marks	**60**	**25**
Exam duration	**2½Hrs**	**3Hrs**

COURSE OUTCOMES (COs):

- **CO1:** Illustrate the structure and functions of organelles, classify and quote chemical composition of living organism. Gain knowledge on metric system and identify formulae and apply to solve problems using analytical skills.
- **CO2:** Interpret the concept of atom and depict the electronic configuration of elements. Illustrate the nature and significance of various Chemical bonds and theories of chemical bonding.
- **CO3:** Acquire the knowledge of concept of acids, bases, buffer & its preparation and colligative properties of solutions.
- **CO4:** Elucidate the construction and uses of various electrochemical cells, half-cell reactions. Calculate electrode potential using various methods. Apply laws of thermodynamics in system and epitomize redox reactions and its role as biologically active form in a system.

Course Content : DSC (1) - Chemical Foundations of Biochemistry-1	**56Hr**
Unit 1: Scope of Biochemistry and Units of measurement	**14hr**
• **Scope of Biochemistry-**Definition, aim and scope of Biochemistry. Origin of life (five theories), types of organisms - prokaryotes, eukaryotes, unicellular and multicellular organisms (characteristics & differences). Compartmentalization of cellular functions (lower and higher organisms), subcellular organelles. General physiological events of organisms (plants and animals). Chemical composition of living organisms. • **Units of measurement** - SI units - mass, volume, temperature, amount, length and time. An overview on the metric system - Atomic weight, molecular weight, equivalent weight. Basicity of acids & acidity of bases. Avogadro`s number, concentration units - molarity, normality, molality, mole concept, mole to molar conversion. Oxidation number and its significance. Density and specific gravity and their significances.	**7hr** **7hr**
Unit 2 : Atomic structure and Chemical bonds	**14hr**
• **Atomic structure** –Atom, Dalton's postulates, Structure of an atom, electrons, Quantum numbers and their significance. Orbit, orbitals and their differences. Shapes of s, p, d, and f atomic orbitals. Illustrate the rules for filling up of electrons in various orbitals - Pauli`s exclusion principle, Aufbau principle, and Hund`s rule. Electronic configuration of elements (upto Z = 30), Octet rule & its limitations.	**5hr**

• **Chemical bonds** -Different types of bonds, formation and properties – Coordinate bond, covalent bonds - Sigma & pi bonds, Electrostatic interactions - ionic bonds. Non-covalent bonds - Vander Waals interactions - ion-dipole, dipole-dipole interactions, London forces, hydrogen bonds, hydrophobic interactions and their significance. Concept of back bonding. Outline of theories of bonding (VBT & MOT).	**9hr**
Unit 3: Buffers and Colligative properties	**14hr**
• **Buffers** - Acids, bases, Arrhenius, Lewis and Bronsted- Lowry concept of acid-base (with examples). Structure of water, phase diagram of pure water, ionic product of water, special properties of water. Buffers- composition, types with examples, buffer capacity. Buffers in animal system. pH scale, pKa value, isoelectric pH and its significance. Henderson-Hasselbalch equation. Titration curve of $H_3PO_4$and CH_3COOH (comparative study). Ionization of HCl, HNO_3 and H_2SO_4. • **Colligative properties**-Colligative properties of solutions. Types of solute- ionizable & non-ionizable solutes. Types of solution (hyper, hypo & isotonic). Osmosis, osmotic pressure and its determination by Berkely and Hartley's method.Vant Hoff law, Roult`s law, Reverse osmosis, Vapor pressure and its application in distillation. Elevation in boiling point, depression in freezing point, de-icing. Anomalous colligative properties of solutions.	**6hr** **8hr**
Unit 4: Electrochemistry and Redox reactions	**14hr**
• **Electrochemistry** - Scope of electrochemistry, Electrochemical cells- Daniel cell/galvanic cell. Electrode potential and its measurement. Electrolysis and its applications. Types of electrolytes with examples, primary and secondary batteries (lead & Ni-Cd batteries). Electrodes, half-cell reaction, standard electrodes-SHE, Glass & Calomel. • **Thermodynamics** -Laws of thermodynamics, entropy, enthalpy and their relation. Gibb's energy and free energy change. Standard free energy change in biological system. • **Redox reactions** -Redox reactions, redox potential and its application, energy linked to redox reactions. Reduction of oxygen (respiration), oxidation and reduction of iron in hemoglobin. Biological active forms of zinc, calcium, nickel, molybdenum, selenium, and cobalt (with examples). Redox reactions of - NAD^+/NADH, $NADP^+$/NADPH, FAD/$FADH_2$, FMN/$FMNH_2$. Molecularity and order of a reaction.	**7hr** **7hr**
References: 1. Advanced Inorganic Chemistry: A comprehensive Text, 1999, Cotton A and Geoffrey Wilkinson, 6th edition, Wiley publication. 2. Inorganic Chemistry, 2014, Miessler GL, Paul Fischer PJ, and Tarr DA, 5th edition, Pearson Publication. 3. Inorganic Chemistry, 2004, Catherine E and Sharpe AG, ACS publication 4. Inorganic Chemistry, 2015, Overton, Rourke, Weller, Armstrong and Hagerman,Oxford Press. 5. Physical Chemistry: A molecular approach, 2019, Donald A, McQuarrie and Simon JD, Viva Books Publication. 6. Physical chemistry 2019, Atkins P, Paula JD, Keeler J , 11th edition , Oxford press • https://collegedunia.com/exams/volumetric-analysis-chemistry-articleid-746 • https://www.britannica.com/science/volumetric-analysis • https://www.nagwa.com/en/explainers/809181620245/	

DSC (1)-Practical Syllabus

Course Content – DSC(1) Volumetric analysis- Practical-1	**56 hr**
List of experiments to be conducted	
1. Concept of molarity, molality and normality- Calculation and preparation of molar solutions, normal solutions and percent solutions and dilute solutions. (Problems based on Normality & molarity to be given in exams). 2. Calibration of volumetric glassware's (Burette, pipette). 3. Preparation of standard Sodium carbonate solution, standardization of HCl (Methyl orange) and estimation of NaOH in the given solution. (Methyl orange or phenolphthalein). 4. Preparation of standard Oxalic acid. Standardization of NaOH and estimation of H_2SO_4in the given solution (phenolphthalein) 5. Preparation of standard Oxalic acid solution. Standardization of NaOH solution and estimation of acidity in vinegar. 6. Preparation of standard potassium bipthalate. Standardization of NaOH and estimation of HCl in the given solution. (Phenolphthalein). 7. Preparation of standard potassium bi-phthalate solution, standardization of sodium hydroxide solution and estimation of alkalinity of antacids 8. Preparation of standard Oxalic acid. Standardization of $KMnO_4$ and estimation of H_2O_2 in the given solution. 9. Preparation of standard Oxalic acid solution. Standardization of $KMnO_4$ solution and estimation of calcium in milk. 10. Preparation of $ZnSO_4$. Standardization of EDTA and estimation of total hardness of water using Eriochrome-Black-T indicator. 11. Estimation of sulphuric acid and oxalic acid in a mixture using standard NaOH solution and standard $KMnO_4$ solution. 12. Determination of density and viscosity of the given liquid using specific gravity bottle and Ostwald's viscometer. 13. Determination of density and surface tension of the given liquid using specific gravity bottle and stalagnometer.	

References

1. Svehla, G. Vogel's Qualitative Inorganic Analysis, Pearson Education, 2012.
2. Mendham, J. Vogel's Quantitative Chemical Analysis, Pearson, 2009.
3. Dr. O. P. Pandey, D. N. Bajpai, dr. S. Giri, Practical Chemistry S. Chand and Co. Ltd.,
4. Principles of Practical Chemistry- M. Viswanathan
5. Instrumental Methods of chemical Analysis B.K Sharma.
6. Experiments in Physical Chemistry R.C. Das and B. Behra, Tata Mc Graw Hill
7. Advanced Practical Physical Chemistry J.B.Yadav, Goel Publishing House
8. Advanced Experimental Chemistry. Vol-I J.N.Gurtu and R Kapoor, S.Chand and Co.
9. Practical Chemistry K.K. Sharma, D. S. Sharma (Vikas Publication).
10. General Chemistry experiment – Anil J Elias (University press).
11. Vogel textbook of quantitative chemical analysis G.H. Jeffery, J. Basset.
12. Quantitative chemical analysis S. Sahay (S. Chand & Co.).
13. Practical Chemistry, Dr O P Pandey, D N Bajpai, Dr S Giri. S. Chand Publication
14. College Practical Chemistry. V K Ahluwalia, SunithaDingra, Adarsh Gulati
15. Practical Physical Chemistry- B. Viswanathan, P S Raghavan. MV Learning Publication

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https://www.nagwa.com/en/explainers/809181620245/

COURSE ARTICULATION MATRIX: DSC (1) -212169

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO 11	PO 12
CO1	2	3	1	2	1	1	1	1	2	1	-	1
CO2	3	2	1	-	1	1	1	1	1	1	-	-
CO3	2	2	1	1	1	1	1	1	1	1	1	1
CO4	2	2	1	-	1	1	1	1	1	1	1	1
Weighted average	2.25	2.25	1	1.5	1	1	1	1	1.25	1	1	1

OE (1) Biochemistry Syllabus for All Programs (Except Science)

Semester-I

Course Code : 21OEBIC101	
Course Title:	**Biochemistry in Health and Disease**
Total Course credits (L:T:P) (3:0:0)	**03**
Total contact hours	**42**
Hours of teaching /week	**03**
Formative assessment marks	**40**
Semester End Assessment marks	**60**
Exam duration	**2 ½ Hrs**

COURSE OUTCOMES (COs):

- **CO1:** Gain knowledge about health, dimensions of health and various terminologies used in health and disease conditions. Classify diseases and suggest measures for general health care.
- **CO2:**Illustrate symptoms, diagnosis, treatment and preventive measures associated with different types of diseases and disorders
- **CO3:** Identify, assess, and implement personal wellness behaviors and individual health promotion strategies and illustrate the nature of infection and their defensive mechanisms.

Course Content : OE(1)- Biochemistry in Health and Disease	**42hr**
Unit 1: Introduction:	**14hr**
• WHO definition of health, Health and hygiene, General health care. Factors affecting health, Indicators of health and evaluation of health. Classification of diseases - Endemic, Epidemic, Pandemic; Professional health hazards. • **Disease conditions:** Acute disease, chronic disease, Incurable disease, Terminal disease, Illness, disorders, Syndrome, Pre-disease. • **Treatmen**t: Psychotherapy, Medications, Surgery, Medical devices, and Self-care. • **Dimensions of Health**: Physical, Mental, Spiritual, Emotional, Environmental, and Philosophical.	
Unit 2: Diseases and Disorders	**14 hr**
• **Bacterial diseases:** Tuberculosis, Cholera, Typhoid, conjunctivitis. • **Sexually transmitted diseases (STD):** Syphilis and AIDS - Information, treatment guidelines and Prevention. • **Non-communicable diseases:** Malnutrition - Under nutrition, Over nutrition, Nutritional deficiencies - Anemia, Stroke, heart diseases, Cancer, mental illness, Iodine deficiency, Epilepsy, Asthma. (Causative agents/Causes, symptoms, diagnosis, treatment, prognosis, prevention) • **Genetic disorders:** Down's syndrome &Sickle cell anemia. • **Lifestyle disorders:** Obesity, Liver cirrhosis, Diabetes mellitus, Hypertension (Causes, effects, prevention and treatment)	
Unit 3: Health Promotions:	**14 hr**
• Preventing drug abuse, Oral health promotion by tobacco control. • Mental hygiene and mental health: Concepts of mental hygiene and mental health,	

Characteristics of mentally healthy person, Warning signs of poor mental health, promotive mental health strategies and services, Ego defense mechanisms and implications, Personal and social adjustments, Guidance and Counseling. • Infection control: Nature of infection, Chain of infection transmission, Defenses against infection transmission	

References

1. Modern Nutrition in Health and Disease 2006 10th Edition by Maurice E. Shils, Moshe Shike, A Catharine Ross.
2. Clinical Biochemistry and Metabolic Medicine, 2012 Eighth Edition by Martin Andrew Crook, CRC Press,
3. Nutrition & Health in Developing Countries, 2000, Editors: R. Semba and M.W. Bloem, Humana Press

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https://www.healthline.com
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https://www.ncbi.nlm.nih.gov/books/NBK7627/
https://www.journals.elsevier.com/international-journal-of-medical-microbiology

COURSE ARTICULATION MATRIX: OE(1)- 21OEBIC101

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	3	1	1	1	1	1	1	2	-	2
CO2	2	2	3	1	1	1	1	1	1	2	1	2
CO3	2	2	3	1	1	1	1	1	1	2	1	2
Weighted Average	**2**	**2**	**3**	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**1**	**2**

DSC (2) Syllabus for B.Sc. Biochemistry (Basics and Honors)

Semester-II

Course Code : 212269		
	Theory	**Practical**
Course Title:	**DSC(2)-Chemical Foundations of Biochemistry-2**	**Qualitative & Quantitativeanalysis-2**
Total Course credits:(L:T:P) (4:0:2)	**04**	**02**
Total contact hours	**56**	**56**
Hours of teaching/week	**04**	**04**
Formative assessment marks	**40**	**25**
Semester End Assessment marks	**60**	**25**
Exam duration	**2 ½ Hrs**	**3Hrs**

COURSE OUTCOMES (COs):

- **CO1:** Illustrate the properties, characteristics and applications of different types of catalysts and colloids in daily life and elucidate the stability and purification of colloids using different methods.
- **CO2:** Categorize organic compounds and nomenclature it using IUPAC rules. Implement the different types of stereoisomer and their configuration using CIP rules and illuminate the role of stereochemistry in biological systems.
- **CO3:** Classify organometallic compounds, minerals and ores and acquire knowledge about preparations, applications of organometallic compounds and extraction, purification and importance of minerals and ores.Illustrate the structure, occurrence and role of metalloporphyrins in biological systems.
- **CO4:** Categorize the inorganic molecules and nomenclature it by implementing rules. Depict coordination complexes, its stereochemistry and application in various fields. Illustrate the sources, types, poisoning, signs and symptoms of heavy metals. Gain competenceinfree radicals-generation and its role in biological system.

Course Content :DSC (2) -Chemical Foundations of Biochemistry-2	**56hr**
Unit 1: Chemical Catalysis & Colloids	**14hr**
• **Chemical Catalysis**: Definition, characteristics, catalytic promoters and types of catalysts. Multifunctional catalysis. Theories of catalysis (intermediate compound formation & adsorption theory). Properties, characteristics of enzyme catalysis, autocatalysis and acid-base catalysis. Industrial catalysis and its applications. • **Colloids:** Colloids, suspension and true solutions. Classification of colloids (based on physical state, particle size and interaction between dispersed phase & medium). Differences between lyophobic & lyophilic sols. Properties of colloids- kinetic property (Brownian movements), electric properties (electrophoresis & electro-osmosis). Stability of colloids - coagulation; Effect of boiling and addition of electrolytes. Peptization with examples. Mutual precipitation of colloids, Purification of colloids – dialysis, electro-dialysis, ultrafiltration and ultracentrifugation. Colloids in daily life and applications. Emulsion- types, micelles, applications of emulsions.	

Unit 2: Nomenclature of Organic Compounds & Stereochemistry	14hr
• Classification, naming- IUPAC nomenclature, compounds containing one, two functional groups with chains, homologous series. • **Stereochemistry**- Definition and types, Structural Isomerism- types with examples. Stereoisomerism - Optical isomerism (Lactic acid, tartaric acid), symmetry of elements, plane polarized light and optical purity. Molecular chirality. Geometrical isomerism (maleic & fumaric acid). Nomenclature properties of enantiomers and diastereomers, epimers & anomers with examples. Racemic mixture & resolution (chemical & biological methods). Fischer and Newman projection formulae (molecule with one and two chiral and achiral centers). Priority rules (CIP rules) - E and Z, R and S, D and L notations, absolute and relative configuration. Role of stereochemistry in biological systems.	
Unit 3: Organometallic Compounds & Metalloporphyrins	**14hr**
• **Organometallic Compounds:** Definition, Classification with examples. Preparation of Grignard reagents, reactions, applications & limitations. Organolithium compounds, Organozinc compounds - preparation and synthetic applications. Metallocenes: ferrocenes- structure, properties & its importance. • Introduction to mineral and ores, classification. Extraction of crude metal from their ores (General steps), Extraction of Nickel from sulphide ore followed by Mond's process of purification, Gold from native ore by cyanide process and refining by quartation process. Uses of metals, Importance of minerals. • **Metalloporphyrin:** Definition, basic porphyrin nucleus structure, types (brief). Role of metal ions in biological systems- Fe, Co**,** Zn, Mg (occurrence, structure and functions) and iron-sulphur clusters with suitable example (Nitrogenase) and their role in biological systems.	
Unit 4: Inorganic Chemistry & Heavy metal poisons	**14hr**
• Nomenclature of inorganic molecules- IUPAC nomenclature (ionic, molecular and inorganic acids). Coordination compounds – formula, IUPAC nomenclature, central metal ion, ligand & its types, coordination number & its significance, coordination sphere, complex ion. Oxidation number of central atom, stock notations. Homoleptic and heteroleptic complexes. Isomerism in complexes – structural (ionization, hydrate, linkage and coordination isomerism). Stereoisomerism- geometrical (coordination number 4), optical isomerism with simple inorganic complexes. Applications of qualitative, quantitative analysis, photographic, metallurgy, medicine, catalysis and bio-systems. • **Heavy Metal Poisons:** Introduction, sources, poisoning/entry, signs and symptoms- lead, mercury, aluminium, arsenic, cyanide, phosphorus, CO, SO_2, NO_2, halides (F & Br) and corrosives. • **Free radicals**: Introduction, sources (exogenous & endogenous), types of free radicals, generation (enzymatic & non-enzymatic) and scavenger systems. Redox reactions. Endergonic and exergonic reactions with examples. The Importance of free radicals in biological systems.	

References

1. Physical Chemistry 2006, Peter Atkins. 8th edition, W.H. Freeman and Company
2. Inorganic Chemistry: Principles of structure and Reactivity, 2006, Huheey JE, Keiter, EA, Keiter RL, Pearson Education India
3. Stereochemistry: Conformation and Mechanism, 2009, Kalsi PS, New Age International Publications
4. Introduction to Stereochemistry 2012, Kurt Mislow, Dover Publications
5. A text book of Organic Chemistry 2016, Raj K Bansal, 6th edition, New Age International

Publications
6. Advanced Inorganic Chemistry 1999, Cotton et al , 6th edition, A Wiley -International
7. Principles of physical Chemistry by Puri, Sharma and Pathania.
8. Physical Chemistry by R. L. Madan, G. D. Tuli. S. Chand and Co.
9. A Text Book of Physical Chemistry by K.L.Kapoor. Vol.2.Mc. Millan Publisher, India Ltd.
10. Advanced Organic Chemistry by Bahl and Bahl.

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https://www.chemistrynotesinfo.com/2019/07/iron-metalloporphyrins-complexes-in.html
file:///C:/Users/admin/Downloads/biosensors-08-00095-1.pdf
https://iupac.org/wp-content/uploads/2016/07/Inorganic-Brief-Guide-V1-1.pdf
https://www.healthline.com/health/heavy-metal-poisoning

DSC-2- Practical Syllabus

Course Content–DSC(2):Qualitative and quantitative analysis – 2	**56hr**
List of experiments to be conducted	
1. Systematic Semi micro–Qualitative Analysis of Inorganic Salt Mixtures Systematic semi micro qualitative analysis of two acid and two basic radicals in the given inorganic salt mixture. The constituent ions in the mixture to be restricted to the following. (Any **five** binary mixtures shall be given) **Anions:** HCO_3^-, CO_3^{2-}, Cl^-, Br^-, NO_3^-, BO_3^{3-}, SO_4^{2-} and PO_3^{2-}. **Cations**: Pb^{4+}, Al^{3+}, Fe^{2+}, Fe^{3+}, Mn^{2+}, Zn^{2+}, Ca^{2+}, Sr^{2+}, Ba^{2+}, Mg^{2+}, K^+, Na^+&NH_4^+. 2. Determination of molecular weight of non-volatile solute by Walker-Lumsden method. 3. Determination of rate constant of decomposition of H_2O_2 using $KMnO_4$ by volumetric analysis method using ferric chloride as catalyst. 4. Determination of distribution coefficient of benzoic acid between water and benzene or iodine between water and carbon tetrachloride. 5. Determination of distribution coefficient of benzoic acid between water and toluene. 6. Determination of role of emulsifying agents in stabilising the emulsions of different oils.(Demonstration) 7. Verification of Beer's Law. Estimation of unknown concentration of glucose by using colorimeter 8. Calibration of pH meter and determination of pH of aerated soft drinks.	
References : 1. Svehla, G. Vogel's Qualitative Inorganic Analysis, Pearson Education, 2012. 2. Mendham, J. Vogel's Quantitative Chemical Analysis, Pearson, 2009. 3. Dr. O. P. Pandey, D. N. Bajpai, dr. S. Giri, Practical Chemistry S. Chand and Co. Ltd., 4. Principles of Practical Chemistry- M. Viswanathan 5. Instrumental Methods of chemical Analysis B.K Sharma. 6. Experiments in Physical Chemistry R.C. Das and B. Behra, Tata Mc Graw Hill 7. Advanced Practical Physical Chemistry J.B.Yadav, Goel Publishing House 8. Advanced Experimental Chemistry. Vol-I J.N.Gurtu and R Kapoor, S.Chand and Co.	

9. Practical Chemistry K.K. Sharma, D. S. Sharma (Vikas Publication).
10. General Chemistry experiment – Anil J Elias (University press).
11. Vogel textbook of quantitative chemical analysis G.H. Jeffery, J. Basset.
12. Quantitative chemical analysis S. Sahay (S. Chand & Co.).
13. Practical Chemistry Dr O P Pandey, D N Bajpai, Dr S Giri. S. Chand Publication
14. College Practical Chemistry. V K Ahluwalia, SunithaDingra, Adarsh Gulati
15. Practical Physical Chemistry- B. Viswanathan, P S Raghavan. MV Learning Publication.

- https://www.researchgate.net/publication/332029217_Qualitative_analysis_of_organic_mixtre_Binary_and_Ternary_chart_for_MSc_organic_students
- https://chem.libretexts.org/Ancillary_Materials/Laboratory_Experiments/Wet_Lab_Experiments/Organic_Chemistry_Labs/Intermediate_Chemical_Experimentation/02%3A_Qualitative_Organic_Analysis/2.01%3A_New_Page

COURSE ARTICULATION MATRIX: DSC (2)-212269

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	2	2	1	1	1	1	1	1	1	-	1
CO2	3	2	2	1	1	-	1	1	1	-	-	-
CO3	2	1	1	1	1	1	1	1	1	-	1	1
CO4	2	1	1	1	1	2	1	1	1	1	-	1
Weighted average	**2.5**	**1.5**	**1.5**	**1**	**1**	**1.33**	**1**	**1**	**1**	**1**	**1**	**1**

OE (2) Biochemistry Syllabus for All Programs (Except Science)

Semester-II

Course Code : 21OEBIC201	
Course Title:	**Nutrition and Dietetics**
Total Course credits (L:T:P) (3:0:0)	**03**
Total contact hours	**42**
Hours of teaching/week	**03**
Formative assessment marks	**40**
Semester End Assessment marks	**60**
Exam duration	**2 ½ Hrs**

COURSE OUTCOMES (COs):

- **CO1:** Acquire the knowledge on the basic principles of balance diet in providing energy requirements, Recommended Dietary Allowances and factors influencing BMR.
- **CO2:** Gain competence in connecting the role of various nutrients in maintaining health and ability to describe the functions and role of macronutrients and micronutrients, their requirements and the effect of deficiency and excess.
- **CO3:** Apply basic nutrition knowledge in diet planning and diet considerations in disease conditions and the impact of various functional foods on our health.

Course Content : OE (2)- Nutrition and Dietetics	**42 hr**
Unit 1: Basic Concepts of Nutrition:	**14 hr**
• Introduction, Basic principles of a balanced diet to provide energy and nutrients. Composition of foods and proximate analysis of foods. Calorific value of foods and Basal metabolism. Basal Metabolic Rate (BMR), Factors affecting BMR, Energy requirements for different physical activities, Specific dynamic action of food, Nutritive value of proteins. Energy requirements and recommended dietary allowance (RDA) for infants, children and pregnant women. Protein calorie malnutrition.	
Unit 2: Macronutrients and Micronutrients:	**14 hr**
• Carbohydrates- Digestible and non-digestible, Dietary fibers, Essential fatty acids, lipoproteins and cholesterol. • Essential amino acids, Fortification of foods, Protein requirement for different categories. • Vitamins-Sources, requirements, functions and deficiency symptoms of Vitamin-C, Thiamine, Riboflavin, Pyridoxine, Folic acid, Vitamin B12. Absorption of fat-soluble vitamins- A, D, E and K. • Micronutrients: Source, Daily requirement, functions and deficiency disease symptoms of Macro-minerals (Ca, P, and Cl) and micro minerals/trace elements (I, Fe, Zn and Se).	
Unit 3: Dietetics and Diet Therapy:	**14 hr**
• Introduction, Food pyramid, Diet planning and introduction to diet therapy. Nutritional requirements for different age groups, anemic child, expectant women, and lactating women. Diet planning for prevention and cure of nutritional deficiency disorders.	

• Diet therapy: Functional foods, Anthropometric measurements, dietary considerations during fever, malaria, and tuberculosis. Prevention and correction of obesity, underweight, and metabolic diseases by diet therapy. Dietary interventions to correct and or manage the gastrointestinal diseases (indigestion, peptic ulcer, constipation, diarrhea, steatorrhea, irritable bowel syndrome. • Functional foods-based diet therapy for diabetes, cardiovascular disease and cancer.	

References:

1. Clinical Dietetics and Nutrition, 2002, Antia FP and Abraham P. Oxford University Press; 4th Edition. ISBN-10: 9780195664157.
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3. Krause's Food, Nutrition and Diet therapy, 2003, Mahan KL and Escott-Stump S. Elsevier, ISBN: 9780721697840.
4. Human Nutrition and Dietitics. 1986, Passmore R. and Davidson S. Churchill Livingstone Publications, ISBN-10: 0443024863.
5. Rosemary Stanton's Complete Book of Food & Nutrition, 2007, Simon & Schuster Publishers, Australia, ISBN 10: 0731812999
6. Food Science and Nutrition, 2018, Roday S. Oxford University Press Publishers, ISBN: 9780199489084/0199489084.
7. Food Science, 2007, Srilakshmi S. New Age International (P) Limited Publishers, ISBN: 9788122420227/ 8122420222.

https://www.livestrong.com
https://www.mayoclinic.org
https://www.medicalnewstoday.com
https://www.med-health.net/Lifestyle-Diseases.html

COURSE ARTICULATION MATRIX: OE (2) - 21OEBIC201

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	2	2	1	1	1	1	1	1	2	-	2
CO2	3	2	2	1	1	1	1	1	1	2	1	2
CO3	3	2	2	1	1	1	1	1	1	2	1	2
Weighted average	**3**	**2**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**1**	**2**

Continuous Formative Evaluation/Internal Assessment (DSC & OE)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is **40:60** for IA and Semester End Theory Examinations respectively and **50:50** for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1(C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	40 Marks	25Marks

Evaluation Process of IA Marks shall be as follows:

- The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.
- The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.
- During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.
- In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.
- The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

TheoryFormativeassessment	C1 Mark	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.

PracticalFormative assessment	C1 Mark	C2 Marks	Total Marks
Session Test	10	-	10
Record/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	15	15
Total	10	15	25

- For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.
- The teachers concerned shall conduct test/seminar/case study etc., the students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department.
- Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.
- The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.
- The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.
- There shall be no minimum in respect of internal assessment marks.
- Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

B.Sc. Biochemistry Semester I
Practical Examination- Scheme of Valuation

(DSC-1): Volumetric analysis- Practical-1

Duration: 3 hours **Practical Proper Max. Marks: 25**

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The students will be evaluated on the basis of skill, comprehension and recording the results.

The student has to compulsorily submit the practical record during C1 and C2. For C3, the record has to be certified by the Head of the Department.

The student is evaluated for **C1 & C2** respectively as per the following scheme:

Heading	Marks
C1 - Principle writing + Problem solving	10
C2- Experiment + Record/Continuous assessment	10+05=15
Total	**25**

The student is evaluated for **25 marks** in **C3**as per the following scheme.

- **PART- A: Principle writing** **Marks- 05**
- **PART- B:Minor Experiment** **Marks- 03**
- **PART- C: Major Experiment** **Marks- 17**

PART- A: Principle writing (Time-15min) **Marks- 05**

Principle of any ONE of the following experiment to be given for writing:

1. Determination of density and viscosity of the given liquid using specific gravity bottle and Ostwald's viscometer.
2. Determination of density and surface tension of the given liquid using specific gravity bottle and stalagnometer.
3. Preparation of standard potassium bi-phthalate solution, standardization of sodium hydroxide solution and estimation of alkalinity of antacids
4. Preparation of standard Oxalic acid solution. Standardization of $KMnO_4$ solution and estimation of calcium in milk.
5. Preparation of standard oxalic acid solution. Standardization of NaOH solution and Estimation of acidity in vinegar.

PART- B: Minor Experiment **Marks-03**

Any ONE problem for calculation based on Normality /Molarity is to be given.
(Equivalent & Molecular weight is to be specified)

Formula + Calculation + Report ----------→**Marks (1+1+1=03)**

PART- B: Experiment – Volumetric analysis **Marks- 17**

Any **ONE** of the following experiments is to be given for conducting.

(Tabular column & Calculations to be written)

NOTE: Standard solutions to be prepared by the candidate .The link solution and solution to be estimated is to be provided in reagent bottles.

1. Preparation of standard potassium bipthalate. Standardization of NaOH and Estimation of HCl in the given solution. (Phenolphthalein).
2. Preparation of standard Sodium carbonate solution, standardization of HCl (Methyl orange) and Estimation of NaOH in the given solution. (Methyl orange or phenolphthalein).
3. Preparation of standard Oxalic acid. Standardization of NaOH and Estimation of H_2SO_4 in the given solution (phenolphthalein).
4. Preparation of standard Oxalic acid. Standardization of $KMnO_4$ and Estimation of H_2O_2 in the given solution.
5. Preparation of $ZnSO_4$. Standardization of EDTA and estimation of total hardness of water using Eriochrome-Black-T indicator
6. Estimation of sulphuric acid and oxalic acid in a mixture using standard NaOH solution and standard $KMnO_4$ solution.

Assessment of Experimental results

- Preparation of Standard solution & Calculation of Normality **Marks= 03**
- Standardization & Estimation **Marks = 14**(7+7)

Discrepancy	**Standardization Marks(7m)**	**Estimation Marks(7m)**
± 0.2 cm^3	**05**	**05**
± 0.3 cm^3	04	04
± 0.4 cm^3	03	03
± 0.5 cm^3	02	02
Any other value	01	01
Calculation of Normality & Weight/Litre of solution	**02**	**02**

B.Sc. Biochemistry Semester II
Practical Examination- Scheme of Valuation

(DSC-2): Qualitative & quantitative analysis- Practical-2

Duration: 3 hours **Practical Proper Max. Marks: 25**

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The students will be evaluated on the basis of skill, comprehension and recording the results.

The student has to compulsorily submit the practical record during C1 and C2. For C3, the record has to be certified by the Head of the Department.

The student is evaluated for **25 marks** in **C3** as per the following scheme:

Heading	Marks
C1 - Principle writing with formula	10
C2- Experiment + Record/Continuous assessment	10+05=15
Total	**25**

The student is evaluated for **25 marks** in **C3** as per the following scheme.

- **PART- A: Principle & formula writing** **Marks- 05**
- **PART- B: Experiment** **Marks- 20**

PART- A: Principle writing **Marks- 05**

Principle of any of the following experiment may be given for writing: (Time-15min)

(Candidate has to write the procedure instead of formulae for the experiments which does not include any without formulae)

1. Determination of molecular weight of non-volatile solute by Walker-Lumsden method.
2. Determination of rate constant of decomposition of H_2O_2 using $KMnO_4$ by volumetric analysis method using ferric chloride as catalyst.
3. Determination of distribution coefficient of benzoic acid between water and toluene
4. Verification of Beer's Law. Estimation of unknown concentration of a biomolecule by using colorimeter.
5. Determination of role of emulsifying agents in stabilising the emulsions of different oils.
6. Calibration of pH meter and determination of pH of aerated soft drinks.

PART- B:

Systematic semi micro qualitative analysis of an inorganic salt mixture **Marks- 20**

The candidate has to perform the Systematic semi micro qualitative analysis of two acid and two basic radicals in the given inorganic salt mixture.

The constituent ions in the mixture to be restricted to the following (Any five binary mixtures shall be given)

- **ANIONS**: Carbonates, Bicarbonates, Chloride, Bromide, Nitrate, Borate, Sulphate, and Phosphate. (CO_3^{2-}, HCO_3^-, Cl^-, Br^-, NO_3^-, BO_3^{3-}, SO_4^{2-} and PO_3^{2-})

- **CATIONS:** Lead, Aluminium, iron, Manganese, Zinc, Barium, Strontium, Calcium, Magnesium, Ammonium, Potassium and Sodium (Pb^{4+}, Al^{3+}, Fe^{2+}, Fe^{3+}, Mn^{2+} , Zn^{2+}, Ba^{2+} ,Sr^{2+} ,Ca^{2+}, , Mg^{2+}, NH_4^+ K^+& Na^+)

NOTE:

- A minimum of 8-10 salts covering all the above acid and basic radicals should be provided to the examiners.
- Ammonium radical shall be analyzed either in the zeroth group or in the sixth group.
- Salts that yield insoluble salts like lead sulphate, Barium sulphate, Strontium sulphate and Calcium sulphate on double decomposition shall be avoided
- In second group acid radical either Chloride or Bromide or Nitrate shall be given. More than one radical in this group shall be avoided.
- The two cations in the mixture should belong to different groups. However the mixture may contain Ammonium and any one of the other cations in the sixth group.
- Mixtures requiring elimination of Phosphate and Borate ions shall not be given as they are interfering ions [when phosphate and borate are given, cations like Manganese, Zinc, Barium, Strontium, Calcium, Magnesium shall be avoided. The Cations that can be given are Lead, Aluminium, Potassium, Sodium]

Assessment of Experimental results

1. **Preliminary tests** **Marks – 03**

   (Physical state, colour, Solubility in water and dilute HCl)

2. **Identification & confirmatory test** **Marks-16**

Tests	Anion (07)	Cation (09)
Correct identification test	**2x1=02**	**2x1=02**
Correct confirmatory test	**2x2=04**	**2x2=04**
G**ro**up Separation table	**–**	**02**
Balanced ionic equation for any one of the confirmatory test	**01**	**01**

3. **Report the identified ions** **Marks–01**

B.Sc. I/II Semester Examination

Model question paper Discipline Specific Course (DSC)

Biochemistry

Duration: 2.30 hours **Max. Marks: 60**

Instructions: Answer any FIVE questions from Part A and any FIVE questions from Part B.

Part –A **2 x 5 = 10**

1. a.
   b.
   c.
   d.
   e.
   f.
   g.

Part –B **5 x 10= 50**

2. a.
   b
3. a.
   b.
4. a.
   b.
5. a.
   b.
6. a.
   b.
7. a.
   b.
8. a.
   b.

****

NOTE:

1. **Ten marks questions may be divided in to 6+4 or 5+5 & Sub division under each main question shall be from different units.**
2. **Question and marks on each unit should be proportional to the number of teaching hours allotted.**

I Semester B.Sc. Biochemistry Examination

Practical: Model question paper

DSC (1): Volumetric analysis- Practical-1

Duration: 3 hours **Max. Marks: 25**

1.	Write the principle of _____ experiment.	**05 Marks**
2.	Minor experiment (Solving problem)	**03 Marks**
3.	Major experiment (Conduct the experiment and report the results)	**17 Marks**

II Semester B.Sc. Biochemistry Examination

Practical: Model question paper

(DSC-2): Qualitative & quantitative analysis- Practical-2

Duration: 3 hours **Max. Marks: 25**

1.	Write the principle and formula of _____ experiment.	**05 marks**
2.	Major experiment (Conduct the experiment and report the results)	**20 Marks**

Semester I/II Examination

Open Elective-Model question paper

Biochemistry

Duration: 2.30 hours **Max. Marks: 60**

Instructions: Answer any FIVE questions from Part A and any FIVE questions from Part B.

Part -A **2 x 5 = 10**

1. a.
   b.
   c.
   d.
   e.
   f.
   g.

Part –B **5 x 10= 50**

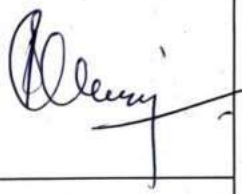
2. a.
   b
3. a.
   b.
4. a.
   b.
5. a.
   b.
6. a.
   b.
7. a.
   b.
8. a.
   b.

****

NOTE:

1. **Ten marks questions may be divided in to 6+4 or 5+5 & Sub division under each main question shall be from different units.**
2. **Question and marks on each unit should be proportional to the number of teaching hours allotted.**

Board of Studies

Sl No	Name and Address	Designation	Signature
1	Ms. Ramya V HoD, Department of Biochemistry, SBRR Mahajana First Grade College, Autonomous Jaylakshmipuram, Mysuru Mobile No:7760108585 ramyav.fgc@mahajana.edu.in	Chairperson	
2	Dr. Kemparaju K Professor, DoS in Biochemistry, Manasagangothri University of Mysore, Mysuru. Mobile No:9945996543 kemparajuom@gmail.com kemparaj@biochemistry.uni-mysore.ac.in	Member	
3	Mr. Haleshappa R Assistant Professor, Department of Biochemistry, Nrupathunga University Nrupathunga Road, Bengaluru - 560001 Mobile No:9743896433 haleshr222@gmail.com	Member	
4	Dr. Manjunath M S HoD, Department of Biochemistry, JSS College of Arts, Commerce and Science, Ooty Road, Mysuru. Mobile No:9972023024 manju297382@gmail.com	Member	
5	Dr. Puneeth Kumar Managing Director, Azymus Lifescience Pvt. Ltd. Kellamballi Industrial Area, KIADB, Chamarajanagara Mobile No:8971155575 azymus.pharma@gmail.com	Member	
6	Ms. Pallavi Assistant Professor, Department of Biochemistry MMK & SDM College, Mahila Mahavidyalaya, Mysuru Mobile No:9538582629 pallavimr1990@gmail.com	Member	Absent
7	Ms. Radhika P Assistant Professor, Department of Biochemistry SBRR Mahajana First Grade College, Autonomous Jaylakshmipuram, Mysuru Mobile No:9986585574 radhikap.fgc@mahajana.edu.in	Member	

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DEPARTMENT OF BIOCHEMISTRY

UG ☑

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NEP Syllabi for III and IV Semester B.Sc. Biochemistry

2022-23

DEPARTMENT OF BIOCHEMISTRY

Motto

Science for Future

Vision

Improving knowledge of Science through innovation and research for Better Future

Mission

To provide a broad based fundamental knowledge of Biochemistry by creative research ideas and professional skills

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions -Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO5: Use of Modern Techniques/Tools – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO6: Impact of Science on Society – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning – Engage in the art of self-directed learning.

List of BoS Members

Sl No	Category	Name and Designation	Address for Communication	e-Mail & Mobile No.
1.	Chairperson	Ms. Ramya V Assistant Professor & HoD	Department of Biochemistry, SBRR Mahajana First Grade College, Autonomous Jaylakshmipuram, Mysuru	ramyav.fgc@mahajana.edu.in 7760108585
2.	Nominee by the Vice Chancellor	Dr. Kemparaju K Professor	DoS in Biochemistry, Manasagangothri University of Mysore, Mysuru.	kemparajuom@gmail.com kemparaj@biochemistry.unimysore.ac. 9945996543
3.	Two Experts from Other University	Mr. Haleshappa R Assistant Professor	Department of Biochemistry, Nrupathunga University NrupathungaRoad, Bangalore - 560001	haleshr222@gmail.com 9743896433
4.		Dr. Manjunath M S Assistant Professor & HoD	Department of Biochemistry, JSS College of Arts, Commerce and Science, Ooty Road, Mysore.	manju297382@gmail.com 9972023024
5.	One Person from Industry	Dr. Puneeth Kumar Managing Director	AzymusLifescience Pvt. Ltd. Kellamballi industrial Area, KIADB, Chamarajanagara	azymus.pharma@gmail.com 8971155575
6.	Alumnus	Ms. Pallavi Assistant Professor	Department of Biochemistry MMK & SDM College, MahilaMahaVidyalaya, Mysuru	pallavimr1990@gmail.com 9538582629
7.	Member	Ms. Radhika P Assistant Professor	Department of Biochemistry, SBRR Mahajana First Grade College, Autonomous Jaylakshmipuram, Mysuru	radhikap.fgc@mahajana.edu.in 9986585574

Course Structure (NEP 2020)

II Year B.Sc. Biochemistry

Discipline Specific Courses (DSC), Open Elective (OE)

L: Lecture; **T:** Tutorial; **P:** Practical

Course Code, Type and Title		Hours /week		Number of Credits (L:T:P)	Maximum marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P		C1	C2	C3		
III SEMESTER									
222369	**DSC(3) Bio-Organic Chemistry**	4	0	4 : 0 : 2 (6credits)	20	20	60	2½ Hours	100
	DSC (3) LAB	0	4		10	15	25	3 Hours	50
22OEBIC301	**Any One to be opted OE(3) Biochemical Techniques**	3	0	3 : 0 : 0 (3 credits)	20	20	60	2½ Hours	100
22OEBIC302	**OE(3) Hormones-Biochemistry & Function**								
IV SEMESTER									
222469	**DSC (4) Analytical Biochemistry**	4	0	4 : 0 : 2 (6 credits)	20	20	60	2½ Hours	100
	DSC (4) LAB	0	4		10	15	25	3 Hours	50
22OEBIC401	**Any One to be opted OE(4) Biochemical Toxicology**	3	0	3 : 0 : 0 (3 credits)	20	20	60	2½ Hours	100
22OEBIC402	**OE(4) Plant Biochemistry**								

DSC (3) Syllabus for B.Sc. Biochemistry (Basics and Honors)

Semester-III

Course Code :	222369	
Course Title:	**DSC(3)- Bio-organic Chemistry**	
	Theory	**Practical**
Total Course credits (L:T:P) (4:0:2)	**04**	**02**
Total contact hours	**56**	**56**
Hours of teaching/week	**04**	**04**
Formative assessment marks	**40**	**25**
Semester End Assessment marks	**60**	**25**
Exam duration	**2 ½ Hrs**	**3Hrs**

COURSE OUTCOMES (COs):

CO1: Classify the organic reactions and illustrate the concept of reactive intermediates of organic compounds and the fundamental aspects of reaction mechanism.

CO2: Elucidate the mechanism, stereochemistry and energy profile diagrams of substitution and elimination reactions and addition reactions of with examples.

CO3: Develop competence in relating the chemistry and role of co-enzymes and interpret the mechanism of electrophilic aromatic substitution reaction.

CO4: Acquire the knowledge the Isolation, classification, structure, properties and biological importance of various bio-organic compounds.

Course Content : DSC (3) - Bio-organic Chemistry	**56Hr**
Unit-1: Reaction mechanisms and aliphatic hydrocarbons	**14hr**
• **Introduction:** Meaning of the terms - kinetic and non-kinetic. Fundamental aspects: Homo and heterolytic cleavage. Classification of organic reactions - substitution, addition, elimination and re-arrangement with two examples for each. Concepts of reactive intermediates – Carbocations, carbanions, free radicals, carbenes, nucleophiles and electrophiles (Formation and Stability). Concept of inductive effect and mesomeric effect. Resonance and hyperconjugation • **Aliphatic Hydrocarbons** - Mechanism of addition of HCl to propene, Markovnikov's rule, Alkenes – Ozonolysis, oxidation. Alkynes – formation of acetylides and their importance. Dienes– types with examples. Conjugate dienes-1, 3-butadiene - stability, mechanism of addition of HBr. Conformational analysis of ethane and n–butane.	
Unit 2 : Mechanism of substitution, elimination, and addition reactions	**14hr**
• **Substitution reaction-** SN_1 and SN_2 reactions on tetrahedral carbon, energy profile diagrams, Stereochemistry of SN_2 and SN_1 reactions. Factors affecting SN_2 and SN_1 reactions.Substitution reactions in synthesis of ether (Williamson ether synthesis) and amines. • **Elimination reactions** - E_2 reaction, Zaitsev rule, E_1 reaction. Stereochemistry of E1 & E_2 reactions, E_2 & E_1 elimination from cyclic compounds. Elimination reactions in synthesis of alkynes.	

- **Addition reactions** – Nucleophilic addition reactions of Aldehydes and Ketones with HCN, Formation of acetals& ketals. Addition reactions of Ammonia, primary amines and other ammonia derivatives. Nucleophilic addition in alpha and beta unsaturated aldehydes and ketones: 1, 2 and 1, 4 additions.

Unit 3: Mechanism of electrophilic aromatic substitution reactions **14 hr**

- **Aromatic compounds** – Aromaticity, Huckel's rule, criteria for aromaticity, anti-aromatic, and non-aromatic compounds with examples. Mechanism of electrophilic substitution reactions - Halogenation, nitration and Sulfonation.Mechanism of Friedel crafts alkylation and Friedel crafts acylation. Effect of substituents on reactivity and orientation of mono substituted benzenes and polycyclic benzenoid hydrocarbons (E.g.: Naphthalene)
- **Structure and Role of coenzymes**

  Thiamine pyrophosphate- structure and its role in decarboxylation of alpha- keto acids.

  Biotin- structure and its role in carboxylation of some important biochemical reactions of carbohydrate and lipid metabolism.

  Vit B_{12} its role in rearrangement reactions.

  Vit B_2 coenzymes and its role in redox reactions with suitable examples.

Unit 4: Bio-organic compounds **14 hr**

- **Alcohols**: Classification, Monohydric alcohols: examples, general and distinguishing reactions. Dihydric alcohols: glycols, Tri hydric alcohols: glycerol – synthesis from propene, properties and uses.
- **Phenols:** Classification, electronic interpretation of acidity of phenols, mechanism of Kolbe, Reimer– Tiemann and bromination reactions
- **Hydroxy acids**: Structure and properties: Lactic acid, Citric acid and Isocitric acid. Dicarboxylic acids: Maleic and Fumaric acid. Ketoacids: Pyruvic, α-Ketoglutaric, Oxaloacetic acid.
- **Carbonyl compounds**: General properties, Keto-enol tautomerism. Mechanisms: addition of HCN to acetaldehyde, Claisen and aldol condensations. Quinones: o and p-benzoquinones-structure andproperties.
- **Amines**: Classification, properties, functional group – Basicity of amines, acylation. Reaction with HNO_2 & Schiff's base formation. Distinguishing reactions of primary, secondary and tertiary amines.
- **Heterocyclic compounds:** Definition, classification with examples, structure and biological importance of furan, pyrrole, thiophene, pyridine, pyran, thiazole, pyrimidine, purine, indole, imidazole, quinoline and isoquinoline. Basicity of pyrrole and pyridine.
- **Terpenes**: Definition, Isoprene rule, classification, isolation, structure and biological importance of menthol, camphor, farnesol, phytol, lanosterol, lycopene, and dolichols.
- **Steroids**: Basic ring structure in steroids. Structure and biological importance of cholesterol, phytosterols, ergosterol, cortisol, β-estradiol, testosterone, and aldosterone. Bile acids (Mono, Di & Tri cholic acids).
- **Alkaloids**: Definition, classification based on their structure and biological functions, Isolation of alkaloids, structure and physiological action of morphine, nicotine and atropine.

References:

1. Textbook of Organic Chemistry 22nd Edition S. Chand Publishers2019.
2. Organic Chemistry. Vol. I Fundamental Principles. I. L. Finar. 6th Edn. ELBS,2002
3. Organic Mechanisms, Peter Sykes, Longman,1977
4. Organic Chemistry. R.T. Morrison and R.N. Boyd. 6th Edn. Prentice Hall, India,2018
5. Lehninger- Principles of Biochemistry; DL Nelson and MM Cox [Eds), 6th Edn. Macmillan Publications2012

6. Chemistry- An Introduction to General, Organic and Biological Chemistry, 7th Edn. Karen C. Timberlake, Benjamin Cummings,1999
7. Reaction Mechanisms at a Glance, ed. M. Moloney, Blackwell Science2000.

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https://www.chemistrylearner.com/addition-reaction.html

DSC (3): Practical Syllabus

Course Content–DSC(3): Bioorganic Chemistry -Practical-3	**56 hr**
List of experiments to be conducted	
I. Systematic qualitative analysis of organic compounds. (6 practical) 1. Urea 2. Aniline 3. Benzoic Acid 4. Salicylic acid 5. Benzaldehyde 6. Acetophenone 7 Nitrobenzene 8.Chlorobenzene	
II. Extractions (2 practical) 1. Extraction of starch from potatoes 2. Extraction of casein from milk. 3. Extraction of caffeine from tealeaves	
III. Preparation of the following organic compounds. (2 practical) 1. Acetylation: Preparation of acetyl salicylic acid from salicylic acid. 2. Oxidation: Preparation of benzoic acid from benzaldehyde. 3. Nitration: Preparation of m-dinitrobenzene from nitrobenzene. 4. Hydrolysis: Preparation of benzoic acid from ethyl benzoate.	

References

1. Practical Organic Chemistry: Qualitative Analysis by S.P. Bhutani, A. Chhikara2009.
2. Textbook of PracticalOrganicChemistryIncludingQualitativeOrganic Analysis by Arthur Israel Vogel 2003
3. Comprehensive practical organic chemistry- preparation and quantitative analysis. V. K. Ahluwalia and Renu Aggarwal2004
4. Practical Hand Book of Systematic Organic Qualitative Analysis. Md. Rageeb Md. Usman, S. S. Patil2017
5. Laboratory Manual of Inorganic &Organic Chemistry (Qualitative Analysis) Kalpa Mandal, Sonia Ratnani2020.
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https://www.sciencedirect.com/topics/earth-and-planetary-sciences/nitration

COURSE ARTICULATION MATRIX: DSC (3)- 222369

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO 11	PO 12
CO1	3	1	1	2	1	1	1	1	1	1	-	1
CO2	3	1	1	2	1	-	1	1	1	1	-	1
CO3	3	1	1	2	1	-	1	1	1	1	-	2
CO4	3	1	1	2	1	1	2	1	1	1	1	2
Weighted average	**3**	**1**	**1**	**2**	**1**	**1**	**1.25**	**1**	**1**	**1**	**1**	**1.5**

OE (3) Biochemistry Syllabus for All Programs (Except Science)

Semester-III

Course Code :	22OEBIC301
Course Title:	**Biochemical Techniques**
Total Course credits (L:T:P) (3:0:0)	03
Total contact hours	42
Hours of teaching/week	03
Formative assessment marks	40
Semester End Assessment marks	60
Exam duration	2 ½ Hrs

COURSE OUTCOMES (COs):

- **CO1:** Explicate the different types of microscope and their characteristics.Implement the knowledge of basic principles of centrifugation, their types and applications.
- **CO2:** Develop competence in handling various chromatographic, electrophoretic techniques and apply them in isolating and characterizing different biological molecules
- **CO3:** Acquire the knowledge of basic principle, methodology and applications of radio isotopic methods and spectroscopic methods in bio-analysis.

Course Content : OE(3)-Biochemical Techniques	**42hr**
Unit 1: Microscopy and Centrifugation techniques	**14hr**
• **Microscopy:** Different types of microscopes – electron microscopes – TEM, SEM. Fluorescence and confocal microscopes used in fine structure studies. • **Centrifugation Techniques:** Introduction, basic principle – sedimentation, Sedimentation coefficient. Centrifuge - Basic instrumentation. Types of Centrifuge - Small bench centrifuges, high speed refrigerated centrifuges, analytical ultracentrifuge Preparative ultra- centrifuge (density gradient and differential centrifugation).Applications of centrifuge.	
Unit 2:Chromatography and Electrophoresis techniques	**14 hr**
• **Chromatography:** Introduction, Classification, Principle, theory and applications - paper chromatography, thin layer chromatography, column chromatography- adsorption chromatography and gel permeation. Principle and applications of ion exchange chromatography, affinity chromatography. Applications of High performance liquid chromatography (HPLC). • **Electrophoresis techniques:** Introduction, types, Principle of paper electrophoresis, starch gel electrophoresis. Principle, procedure and applications of agarose gel electrophoresis and PAGE. Principles and applications - Isoelectric focusing, Pulse field electrophoresis, two-dimensional electrophoresis and Capillary electrophoresis.	

Unit 3: Radio isotopic techniques and Spectroscopy	14 hr
• **Radio isotopic techniques:** Introduction to isotopes, stable and unstable radioisotopes, Nature of radioactive decay, decay constant, units of radioactivity. Measurement of radioactivity using proportional counter and GM counter. Principle and applications of autoradiography. Applications of radioisotopes in biological sciences. Harmful effects of radioisotopes on environment and human. Safety measures in handling radio isotopes. • **Spectroscopy:** Introduction, Definition, Nature of electromagnetic radiations. Principles and applications- of UV- Visible spectroscopy, Fluorescence spectroscopy and Infrared spectroscopy. Brief principle of Atomic Absorption spectroscopy. Principle and Applications of NMR, electron spin resonance (ESR) and Mass spectroscopy.	

References:

1. Modern Experimental Biochemistry: Rodney Boyer, 3rd Edn. Benjamin Cummings,2000
2. Practical Skills in Biomolecular Sciences: R Reed, D. Holmes, J. Weyers, and A. Jones 1998
3. Physical Biochemistry: David Frifielder 2nd Edition,1983
4. Biophysical Chemistry Upadya and Upadya,2016
5. Introductory Practical Biochemistry: SK Sawhney and Randhir Singh,2001

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http://www.nature.com/subjects/analytical-biochemistry
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5206469/
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COURSE ARTICULATION MATRIX: **OE (3): 22OEBIC301**

PO / CO	Program Outcomes											
	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	2	1	2	2	1	1	1	1	1	1	-	2
CO2	2	1	2	2	2	2	1	1	1	1	2	2
CO3	2	1	2	2	1	3	1	2	1	1	1	2
Weighted average	**2**	**1**	**2**	**2**	**1.33**	**2**	**1**	**1.33**	**1**	**1**	**1.5**	**2**

OE (3) Biochemistry Syllabus for All Programs (Except Science)

Semester-III

Course Code :	22OEBIC302
Course Title:	**Hormones- Biochemistry and function**
Total Course credits (L:T:P) (3:0:0)	**03**
Total contact hours	**42**
Hours of teaching/week	**03**
Formative assessment marks	**40**
Semester End Assessment marks	**60**
Exam duration	**2 ½ Hrs**

COURSE OUTCOMES (COs):

- **CO1:** Classify hormones anddemystify functions of various hormones**.**
- **CO2:** Interpret the hormonal systems act in an integrated manner to regulate overall body functions.
- **CO3:** Analyze the failure of the normal physiologic functions and integrations associated with some endocrine disorders.

Course Content : OE(3)-Hormones biochemistry and functions	**42hr**
Unit 1: Introduction	**14hr**
• Introduction to the system and concepts of signaling. Classification, intercellular communication, regulation of synthesis and secretion of hormones.Chemical signaling-endocrine, paracrine, autocrine, juxtacrine, and neuroendocrine mechanisms. • Mechanisms of hormone action: synergism, antagonism, and permissive effects. Classification of hormones by the origin, chemical structure, location, and mechanism of action.Physiological role and disorders of Pituitary, Pineal, Thyroid and Parathyroid hormones.Introduction to the hypothalamus as the true master gland with Releasing hormones and inhibitory substances. Neurohypophysis and its secretions – Vasopressin (ADH) and Oxytocin	
Unit 2: Mechanism of Hormones and Signal transduction pathways	**14 hr**
• Physiological role and disorders of hormones of pancreas, adrenal, and placenta. Introduction to gastrointestinal hormones and neurotransmitters (Acetyl choline, GABA, Serotonin). Mechanism of action, target tissues, and the physiological effects of gastrointestinal hormones. Functions of sex hormones. Hormones during ovarian and uterine phases of menstrual cycle; Placental hormones: role of hormones during parturition and lactation. Hormone receptors: receptors in the cell membrane and in the cell. • Secondary and tertiary messengers (cAMP and Ca^{+2}). Overview on signal transduction pathways for steroidal and non-steroidal hormones (One example each).	
Unit 3: Clinical Endocrinology	**14 hr**

Clinical endocrinology- Blood volume, composition and functions of plasma and serum. Separation and storage of body fluids. Methods of hormone estimation, principles of assay systems, normal range of hormones in tissues and clinical conditions leading to abnormal levels with interpretations. Thyroid function test- Determination of T3, T4, and TSH. Infertility profile: Determination of LH, FSH, TSH, Estrogen, Progesterone, Total Testosterone, Free testosterone. Major manifestations of disease of the endocrine pancreas, thyroid, hypothalamus, and pituitary disease

References:

1. Norman AW, Litwack G (1997), Hormones, 2nd Edition, ElsevierPublications.
2. Bolander F (2004), Molecular Endocrinology, 3rd Edition, ElsevierPublications.
3. Rifai N (2007), Teitz Fundamentals of Clinical Chemistry, 6th Edition, Elsevier Publications.
4. Henry's Clinical Diagnosis and Management by Laboratory Methods (2011), 22ndEdition, Elsevier.
5. Vasudevan DM (2011), Text book of Medical Biochemistry, 6th Edition, Jaypee Publishers.
6. Chatterjea MN & Shinde R (2012), Text book of Medical Biochemistry, 8th Edition, JayppePublications.
7. Bishop ML, Fody EP, Schoeff LE (2013), Clinical Chemistry: Principles, Techniques, and Correlations, 7th Edition, WileyPublications.

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- https://www.healthline.com/health/the-endocrine-system
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COURSE ARTICULATION MATRIX: OE (3)- 22OEBIC302

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	1	2	2	1	1	2	1	1	1	-	1
CO2	2	1	2	2	1	2	2	1	1	1	-	1
CO3	2	1	2	2	1	3	2	1	1	1	-	1
Weighted average	**2**	**1**	**2**	**2**	**1**	**2**	**2**	**1**	**1**	**1**	**-**	**1**

DSC (4) Syllabus for B.Sc. Biochemistry (Basics and Honors)

Semester- IV

Course Code :	222469	
Course Title:	**DSC(4)- Analytical Biochemistry**	
	Theory	**Practical**
Total Course credits (L:T:P) (4:0:2)	**04**	**02**
Total contact hours	**56**	**56**
Hours of teaching/week	**04**	**04**
Formative assessment marks	**40**	**25**
Semester End Assessment marks	**60**	**25**
Exam duration	**2 ½ Hrs**	**3Hrs**

COURSE OUTCOMES (COs):

- **CO1:** Illustrate different methods of extraction and biological sample preparation. Get acquainted with care and maintenance of equipment and chemicals. Acquire the knowledge of basic principles of centrifugation, their types and applications.
- **CO2:** Develop competence in handling various chromatographic techniques and apply the principle of chromatography in isolating and characterizing different biological molecules i.e., proteins, electrolytes, hormones etc.
- **CO3:** Implement the knowledge of basic principle, methodology, applications ofvarious electrophoretic techniques and radio isotopic methods in various fields
- **CO4:** Elucidate the principle, methodology and applications of different types of spectroscopic methods of bio-analysis.

Course Content : DSC (4) - Analytical Biochemistry	**56hr**
Unit 1: Biological sample preparation and fractionation and centrifugation	**14hr**
• Introduction to bio-analysis, objectives of bio-analysis, Extraction of molecules from tissue and cells, types of biological sample - living and post-mortem, sample preparation and preservation of biological sample. Extraction of macromolecules from cells and tissues: liquid-liquid, liquid-solid and precipitation methods. • **Centrifugation:** Introduction, principle of centrifugation, sedimentation, sedimentation coefficient, angular velocity, centrifugal field and relative centrifugal field. Basic instrumentation, types of rotors and their design. Types of centrifuge: desk top, high speed and ultra-centrifuge. Construction and applications of Ultra-centrifuge. Types of Ultra centrifuge – Preparative: Differential and density gradient ultra-centrifuge (Principle and applications) and Analytical ultra-centrifuge. Operational instruction and applications of Laboratory centrifuge in sub-cellular fractionation. Care and maintenance of instrument	

Unit 2: Chromatography	14hr
• General principles of chromatography, history of chromatography, Classification based on - nature of stationary and mobile phase: Gas chromatography and liquid chromatography, principle or mode of operation: adsorption and partition, based on geometry: Planar and column chromatography. • Principle, methodology and applications of Paper chromatography - ascending, descending and circular, 2D chromatography, Rf values, Thin layer Chromatography (TLC), Adsorption chromatography, gel-filtration, Ion-exchange and affinity- chromatography. • Advanced chromatography- HPLC and FPLC, UPLC and GLC	
Unit 3: Electrophoretic and radio isotopic methods	**14hr**
• **Electrophoresis:** General principle of electrophoresis, velocity of a charged molecule in the applied electric field in relevance of ohm's law on electrophoretic separation. Factors affecting electrophoresis, supporting media for electrophoresis- work of Tiselius, paper, agarose and polyacrylamide. • Principle, methodology and applications of - Agarose gel, Pulse field electrophoresis, native PAGE and SDS- PAGE, 2-D electrophoresis, diagonal electrophoresis. Identification of proteins; post electrophoresis- dyes and biological activities. Brief principle and applications of applications of capillary electrophoresis, isoelectric focusing, cellulose acetate electrophoresis and immuno- electrophoresis. • **Radioisotopic methods**: Radioactivity, radioactive decay, types of radioactive decay, Properties of α, β, γ radiations. Group displacement law, decay law, decay constant, Half-life period and average life of a radioactive element. Detection of radioactivity – GM counter and scintillation counters (Construction, principle and working) Applications of radioisotopes – ^{3}H, ^{14}C, ^{131}I, ^{60}Co and ^{32}P. Biological effects of radiations, radio labeling, Safety measure in handling radioisotopes.	
Unit 4:Spectroscopic methods of bio-analysis	**14hr**
• Introduction, Wave particle duality of light, **e**lectromagnetic spectrum, transition in spectroscopy. Beer-Lambert's and its limitations. Determination of molar absorption coefficient of molecules. • **Spectroscopic methods:** Working principle and applications of a colorimeter, flame photometer and fluorimeter. Principle, design and applications of UV-Visible spectrophotometer. Principle and applications of IR, and Raman spectroscopy, ESR and NMR spectroscopy.	

References:

1. Analytical techniques in Biochemistry and Molecular Biology; Katoch, Rajan. Springer2011
2. Wilson and Walker's Principles and Techniques of Biochemistry and Molecular Biology 8th Edn. Andreas Hoffman and Samuel Clockie, Ed., Cambridge University Press, 2018.
3. Biochemistry and Molecular Biology; 5th Edn. D. Papachristodoulou, A. Snape, W.H. Elliott,and D. C. Elliott, Oxford University Press 2014.

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https://www.britannica.com/science/chromatography
https://www.youtube.com/watch?v=SnbXQTTHGs4
https://www.youtube.com/watch?v=WQBJjrqK24U

DSC (4) - Practical Syllabus

Course Content–DSC(4): Analytical ChemistryPractical-4	**56hr**
List of experiments to be conducted	
1. Preparation of human lymphocytes using clinical centrifuge **2.** Determination of packed cell volume/ hematocrit **3.** Resolution of basic, acidic & aromatic amino acids by ascending /descending Paper chromatography. **4.** Identification and resolution of amino acids using circular paper chromatography. **5.** Identification and resolution of plant pigments by thin layer chromatography **6.** Separation of plant pigments by Gel permeation chromatography **7.** Determination of Void volume of Gel filtration chromatography **8.** Recording the absorption spectrum of Riboflavin. **9.** Colorimetric estimation of glucose by DNS method/ protein by biuret method **10.** Estimation of DNA by diphenylamine method. **11.** Electrophoretic Separation of plasma proteins by SDS PAGE.	

References :

1. Analytical techniques in Biochemistry and Molecular Biology; Katoch, Rajan. Springer,2011
2. Wilson and Walker's Principles and Techniques of Biochemistry and Molecular Biology 8thEdn. Andreas Hoffman and Samuel Clockie, Ed., Cambridge University Press, 2018.
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- https://www.academia.edu/37972088/Lab_Manual_STK1211_Practical_For_Analytical_Chemistry_Semester_1_Session_2018_2019_pdf
- https://www.researchgate.net/publication/338224715_Practical_analytical_chemistry_lab_manual_lab

COURSE ARTICULATION MATRIX: DSC (4) - 222469

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO 11	PO 12
CO1	3	2	2	2	1	1	1	1	1	1	2	1
CO2	3	2	2	2	1	-	2	1	2	1	2	1
CO3	3	2	2	2	1	-	2	2	1	1	2	1
CO4	3	2	2	2	1	1	2	1	1	1	2	1
Weighted average	**3**	**2**	**2**	**2**	**1**	**1**	**1.75**	**1.25**	**1.25**	**1**	**2**	**1**

OE (4) Biochemistry Syllabus for All Programs (Except Science)

Semester-IV

Course Code :	22OEBIC401
Course Title:	**Biochemical Toxicology**
Total Course credits (L:T:P) (3:0:0)	**03**
Total contact hours	**42**
Hours of teaching/week	**03**
Formative assessment marks	**40**
Semester End Assessment marks	**60**
Exam duration	**2 ½ Hrs**

COURSE OUTCOMES (COs):

- **CO1:** Gain basic idea about biochemical basis various toxins, route of administration, their site of action, dose response, effects and its risk assessments.
- **CO2:** Categorize the classes of toxicants with specific examples and explain the factors effecting toxic responses, absorption, metabolism and elimination of toxins.
- **CO3:** Illustrate the methods of identifying the damages to the targets or organs and biochemical mechanism of toxicity.

Course Content : OE(4)-Biochemical toxicology	**42 hr**
Unit 1: Fundamentals of toxicology and dose response	**14 hr**
Introduction, aim and Scope of toxicology; Toxins/xenobiotics (drugs) and Grading toxicity, use of animal models for toxicity studies, *in vitro* toxicity, organ toxicity (liver and kidney toxicity). Indicators of toxicity/drug effects; biomarkers. Concentration and site of action, dose response, effect of route of administration, ED_{50}, LD_{50}/TD_{50}. Hazard and risk assessment, acceptable daily intake (ADI) and tolerable daily intake (TDI).	
Unit 2: Factors affecting toxic responses	**14 hr**
Disposition- Outline of toxin/drug uptake, entry to cells and systemic circulation. Effect of size, shape, solubility, and charge on their uptake. Major sites of absorption - liver, intestine, and skin. Role of transporters, role of plasma proteins in toxins distribution, levels of toxins/drugs in plasma and its half-life, excretion- disposition by kidney, biliary excretion. Metabolism: Types of metabolic changes of foreign compounds, biotransformation/detoxification reaction, phase-1 and phase -2 reactions, nature of phase-1 and phase 2 enzymes.	
Unit 3: Targets of toxic substances and biochemical mechanism of toxicity	**14 hr**
Toxins/drugs causing liver, kidney, gall bladder, and lung damage. Methods of identifying the damages.Examples of biochemical toxicity mechanisms;	

- Chemical carcinogens- Benzo[a]pyrene, Tamoxifen.
- Liver necrosis- carbon tetrachloride, Valproic acid, and Iproniazid, Kidney damage- Chloroform, Antibiotics- gentamycin,
- Lung damage- 4-Ipomeanol
- Neurotoxicity – Isoniazid, parquet, primaquine and cyclo phosphamide.

References:

1. Biopharmaceuticals Biochemistry and Biotechnology 2nd Edn. Gary Walsh, John Wiley & Sons, Ltd, England, 2003
2. Fundamentals of Experimental Pharmacology, Ghosh, M.N. 2nd Edition, Scientific Book Agency, Kolkatta, 1984.
3. Introduction to Biochemical Toxicology, 3rd Edn., Ernest Hodgson , Robert C. Smart; Wiley-Interscience; , 2001
4. Principles of Biochemical Toxicology, John A. Timbrell, 4th Edn. 2009, Taylor &Francis
5. Remington Pharmaceutical Sciences, Lippincott, Williams and Wilkins,2000

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COURSE ARTICULATION MATRIX: OE (4)- 22OEBIC401

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	1	1	1	1	2	2	1	1	1	1	1
CO2	2	1	1	1	1	2	2	1	1	1	1	1
CO3	2	1	1	1	1	2	2	1	1	1	1	1
Weighted average	**2**	**1**	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**1**	**1**	**1**

OE (4) Biochemistry Syllabus for All Programs (Except Science)

Course Code :	22OEBIC402
Course Title:	**Plant Biochemistry**
Total Course credits (L:T:P) (3:0:0)	03
Total contact hours	42
Hours of teaching/week	03
Formative assessment marks	40
Semester End Assessment marks	60
Exam duration	2 ½ Hrs

COURSE OUTCOMES (COs):

- **CO1:** Gain the knowledge of plant cell, Photosynthesis, transporters and important primary metabolites of plants.
- **CO2:** Illustrate plant growth regulators, plant's responses to various biotic and abiotic stresses.
- **CO3:** Ability to explain secondary metabolites of plants and their functional importance.

Course Content : OE(4)-Plant Biochemistry	**42 hr**
Unit 1: Introduction	**14 hr**
• **Plant cell- structure and molecular components:** Cytoskeleton- an overview. Plant cell division and cell cycle. Outlines of energy production in plant cells, Carbon assimilation and nitrogen assimilation. • **An overview of photosynthesis:** Introduction**,** Photosynthesis and it's importance, Photosynthesis in C3, C4 plants and Crussulacean acid metabolism (CAM) plants, photorespiration- definition and significance, Differences between photorespiration and photosynthesis, Phytochromes, cryptochromes and phototropins (definition, examples and function). Sulfur cycle. • **Plant cell membranes and membrane transport:** Introduction to plant cell membranes and membrane constituents. Organization of transport systems across plant membranes; Different types of pumps operate at plant cell and organelle membranes, importance of H^+-ATPases. Ion channels-properties and significance; Aquaporins and water transport. • **Important Primary metabolites of plants:** Definition of primary metabolites, Cellulose, starch, sucrose, oligosaccharides; fructans, gums, mucilages, poly unsaturated fatty acids, lignin, suberin, surface waxes, sulfides and sweet proteins.	
Unit 2: Plant growth regulators and responses.	**14 hr**
• **Plant growth regulators:** Auxins, cytokinins, gibberellins, abscisic acid, ethylene, brassino steroids, polyamines, jasmonic acid, salicylic acid. • **Plant responses to biotic and abiotic stresses:** Introduction; Plant pathogens and	

diseases; plant defense systems - hypersensitive response; systemic acquired resistance; induced systemic resistance; Plant biotic stress response to pathogens and insects. • **Plant abiotic stress responses**: Salt stress, drought, and heavy metal stress responses; osmotic adjustment and significance of osmotic agents such as proline, sugar alcohols and quaternary ammonium compounds; an overview of oxidative stress and oxidative damage. Antioxidant enzymes and stress tolerance	
Unit 3: Plant secondary metabolites	**14 hr**
• **Plant secondary metabolites (Natural products):** Introduction, secondary metabolites (natural productions), classification of plant secondary metabolites. An overview of primary metabolism contribution to secondary metabolites biosynthesis. • **Alkaloids:** Definition, Classification of alkaloids; Contribution of amino acids for alkaloid biosynthesis; Isolation, purification and characterization of alkaloids. (S)-Seticuline-the chemical chameleon. • **Phenolics:** Definition, Classification of phenolic compounds, flavonoids and anthocyanins; Isolation, purification and characterization of phenolics. • **Terpenoids:** Definition, Classification of terpenoids, isoprene rule; volatile compounds – menthol, camphor, limonene; plant growth regulators – gibberellin, abscisic acid; brassinosteroids and saponins. Isolation, purification, and characterization of terpenoids • **Biological properties of secondary metabolites**: Role of secondary metabolites - in plants defense; in insects signaling, morphogenesis, and defense. Physiologically active secondary metabolites in modern medicine and therapeutic compounds for human ailments	

References:

1. Lehninger's Principles of Biochemistry - Nelson & Cox. CBS Publishers & Distributors, 2013
2. Principles of Biochemistry - Moran, Horton, Scrimgeour, Perry. Pearson, 5thEdition ,2011
3. Plant Biochemistry - P.M. Dey & J.B. Harborne. Hart Court Asia Pvt Ltd.1997
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6. Biochemistry and Molecular Biology of Plants - Buchanan, Greussem and Jones. American Society of Plant Physiologists.2000
7. Natural Products from plants. Peter B. Kaufman, Leland J. Cseke, Sara Warber, James A. Duke, Harry L. Brielmann, CRC Press, Boca Raton1999.
8. Natural Products Targeting Clinically Relevant Enzymes. Paula B. Andrade, Patricia Valentao David M. Pereira. Wiley-VCH Verlag GmbH & Co2017
9. Plant Cell Tissue and Organ Culture: Fundamental Methods - O.L. Gamborg & G.C. Phillips Narosa Publishers, New Delhi, 1995.
10. Kant R. Sweet proteins – Potential replacement for artificial low calorie sweeteners. Nutrition J. 2005; 4:5doi:10.1186/1475-2891-4-5.
11. Misaka T. Molecular mechanisms of the action of miraculin, a taste-modifying protein. Seminars Cell Develop Biol. 24:222-225 2013.

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COURSE ARTICULATION MATRIX: OE (4)- 22OEBIC402

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	1	1	1	1	2	2	1	1	1	-	1
CO2	2	1	1	1	1	2	2	1	1	1	-	1
CO3	2	1	1	1	1	2	2	1	1	1	2	1
Weighted average	**2**	**1**	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**1**	**2**	**1**

Continuous Formative Evaluation/Internal Assessment (DSC & OE)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is **40:60** for IA and Semester End Theory Examinations respectively and **50:50** for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1(C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	40 Marks	25Marks

Evaluation Process of IA Marks shall be as follows:

- The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.
- The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.
- During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.
- In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.
- The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

Theory Formative assessment	C1 Mark	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.

Practical Formative assessment	C1 Mark	C2 Marks	Total Marks
Session Test	10	-	10
Record/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	15	15
Total	10	15	25

- For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.
- The teachers concerned shall conduct test/seminar/case study etc., the students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department.
- Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.
- The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.
- The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.
- There shall be no minimum in respect of internal assessment marks.
- Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

B.Sc. Biochemistry Semester III

Practical Examination- Scheme of Valuation (2022-23)

(DSC3): Bio-Organic Chemistry– Practical 3

Duration: 3 hour **Practical Proper Max. Marks: 25**

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The students will be evaluated on the basis of skill, comprehension and recording the results.
The student has to compulsorily submit the practical record during C1and C2.For C3, Students must submit completed practical records duly signed by batch teachers and certified by HOD at the time of examination. (No evaluation of record)

The student is evaluated for **C1** and **C2** respectively as per the following scheme:

Heading	Marks
C1 Principle writing and Minor Experiment	10
C Experiment + Record/Continuous assessment	10 + 05=15
Total	**25**

The student is evaluated for **25 marks** in **C3** as per the following scheme.

- **PART- A: Principle and reaction writing Marks- 03**
- **PART- B: Minor Experiment Marks- 07**
- **PART- C: Major Experiment Marks- 15**

PART- A: Principle writing (Time-15min) Marks- 03

Principle and reaction of any ONE of the following experiment to be given for writing:

a. Acetylation: Preparation of acetyl salicylic acid from salicylic acid.
b. Oxidation: Preparation of benzoic acid from benzaldehyde.
c. Nitration: Preparation of m-dinitrobenzene from nitrobenzene.
d. Hydrolysis: Preparation of benzoic acid from ethyl benzoate.

PART- B: Minor Experiment Marks- 07

Any ONE of the following extraction is to be given for conduction.

1. Extraction of caffeine from tealeaves
2. Extraction of starch from potatoes
3. Extraction of casein from milk

Assessment of Experimental results

- Principle …… **2 M**

- Performance and Calculation ……..... .**3M**
- Confirmatory test…… **2M**

PART- C: Systematic Qualitative analysis of Organic Compounds **Marks- 15**

Any ONE of the following organic compounds is to be given for identification.

1. Urea	2. Aniline	3. Benzoic Acid
4. Salicylic acid	5. Benzaldehyde	6. Acetophenone
7 Chlorobenzene	8 Nitrobenzene	

Assessment of Experimental results

- Preliminary test ……**1M**
- Detection of elements…….**3M**
- Solubility Test……**2M**
- Functional Group test (min 2 test) ……...**4M**
- Determination of Physical Constant …… **2M**
- Naming of Organic compound and Structure …… **2M**
- Preparation of Solid derivative……..**1M**

B.Sc. Biochemistry Semester IV

Practical Examination- Scheme of Valuation (2022-23)

(DSC4): Analytical Biochemistry– Practical 4

Duration: 3 hours **Proper Max. Marks: 25**

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The students will be evaluated on the basis of skill, comprehension and recording the results.

The student has to compulsorily submit the practical record during C1and C2.For C3, Students must submit completed practical records duly signed by batch teachers and certified by HOD at the time of examination. (No evaluation of record)

The student is evaluated for **C1& C2** respectively as per the following scheme:

Heading	Marks
C1 Principle writing and Minor Experiment	10
C Experiment + Record/Continuous assessment	10 + 05=15
Total	**25**

The student is evaluated for **25 marks** in **C3** as per the following scheme.

- **PART- A: Principle writing** **Marks- 05**
- **PART- B: Minor Experiment** **Marks- 08**
- **PART- C: Major Experiment** **Marks- 12**

PART- A: Principle writing **Marks- 05**

Principle of any of the following experiment may be given for writing: (Time-15min)

1. Preparation of human lymphocytes using clinical centrifuge
2. Determination of packed cell volume/ hematocrit.
3. Separation of plant pigments by Gel permeation chromatography
4. Electrophoretic separation of plasma proteins by SDS PAGE

PART- B: Minor Experiment **Marks- 08**

Any ONE of the following experiment is to be given for conduction.

1. Colorimetric estimation of glucose by DNS method/Protein by biuret method
2. Estimation of DNA by diphenylamine method.
3. Recording the absorption spectrum of riboflavin

Assessment of Experimental results: (EXP 1 & 2)

- Tabular column……... **2M**
- Graph…….. **2M**
- Result:…….**4M**

% Error	Marks awarded
<10%	4
10-15%	3
16-20%	2
Any other value	1

Assessment of Experimental results: (EXP 3)

- Principle……..……... **2M**
- Graph…….. **4M**
- Report:…….**2M**

PART- C: Major Experiment **Marks- 12**

1. Resolution of basic, acidic and aromatic amino acids by ascending/descending paper chromatography.
2. Identification and resolution of amino acids using circular paper chromatography
3. Identification and resolution of plant pigments by thin layer chromatography
4. Determination of void volume of Gel filtration chromatography.

Assessment of Experimental results:

- Principle…… **3M**
- Performance…….. **3M**
- Calculation ……. **4M**
- Identification and report…… **2M**

B.Sc. (Basic) Semester III/IV Examination

Model question paper: Discipline Specific Course (DSC)

Biochemistry

Duration: 2.30 hours **Max. Marks: 60**

Instructions: Answer any FIVE questions from Part A and any FIVE questions from Part B.

Part -A **2 x 5 = 10**

1. a.
   b.
   c.
   d.
   e.
   f.
   g.

Part –B **5 x 10= 50**

2. a.
   b
3. a.
   b.
4. a.
   b.
5. a.
   b.
6. a.
   b.
7. a.
   b.
8. a.
   b.

****

NOTE:

1. **Ten marks questions may be divided in to 6+4 or 5+5 & Sub division under each main question shall be from different units.**
2. **Question and marks on each unit should be proportional to the number of teaching hours allotted**

III Semester B.Sc. Biochemistry Examination

Model question paper Practical 3

DSC (3) -Bio-Organic Chemistry

Duration: 3 hours **Max. Marks: 25**

1. Write the principle and reaction of _____ experiment **03 Marks**
2. Minor experiment (Conduct the experiment and report the results) **07 Marks**
3. Major experiment (Systematic qualitative analysis of organic compounds) **15Marks**

IV Semester B.Sc. Biochemistry Examination

Model question paper Practical 4

DSC (4) - Analytical Biochemistry

Duration: 3 hours **Max. Marks: 25**

1. Write the principle of _____ experiment. **05 marks**
2. Minor experiment (Conduct the experiment and report the results) **08 Mark**
3. Major experiment (Perform, Identify the experiment and report) **12 Marks**

Semester III/IV Examination

Model question paper: Open Elective

Biochemistry

Duration: 2.30 hours **Max. Marks: 60**

Instructions: Answer any FIVE questions from Part A and any FIVE questions from Part B.

Part -A **2 x 5 = 10**

1. a.
   b.
   c.
   d.
   e.
   f.
   g.

Part –B **5 x 10= 50**

2. a.
   b
3. a.
   b.
4. a.
   b.
5. a.
   b.
6. a.
   b.
7. a.
   b.
8. a.
   b.

****

NOTE:

1. **Ten marks questions may be divided in to 6+4 or 5+5 & Sub division under each main question shall be from different units.**
2. **Question and marks on each unit should be proportional to the number of teaching hours allotted.**

Board of Studies

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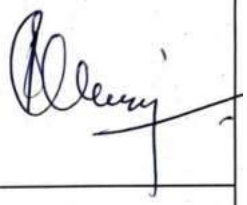
2	Dr. Kemparaju K Professor, DoS in Biochemistry, Manasagangothri University of Mysore, Mysuru. Mobile No:9945996543 kemparajuom@gmail.com kemparaj@biochemistry.uni-mysore.ac.in	Member	
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BOARD OF STUDIES (BoS)

DEPARTMENT OF BIOCHEMISTRY

UG ☑

PG ☐

NEP Syllabi for V and VI Semester B.Sc. Biochemistry

2023-24

DEPARTMENT OF BIOCHEMISTRY

Motto

Science for Future

Vision

Improving knowledge of Science through innovation and research for Better Future

Mission

To provide a broad-based fundamental knowledge of Biochemistry by creative research ideas and professional skills

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions - Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5: Use of Modern Techniques/Tools - Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO 6: Impact of Science on Society - To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO 7: Environment and Sustainability - Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO 8: Moral and Ethical Values - Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO 9: Individual and Team Work with Time Management - Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication - Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance - Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning - Engage in the art of self-directed learning.

List of BoS Members

Sl. No	Category	Name and Designation	Address for Communication	e-Mail & Mobile No.
1.	**Chairperson**	**Ms. Ramya V** Assistant Professor & HoD	Department of Biochemistry, SBRR Mahajana First Grade College, Autonomous Jaylakshmipuram, Mysuru-12	ramyav.fgc@mahajana.edu.in 7760108585
2.	**Nominee by the Vice Chancellor**	**Dr. Kemparaju K** Professor	DoS in Biochemistry, Manasagangothri University of Mysore, Mysuru.	kemparajuom@gmail.com kemparaj@biochemistry.unimysore.ac.in 9945996543
3.	**Two Experts from Other University**	**Mr. Haleshappa R** Assistant Professor	Department of Biochemistry, Nrupathunga University Nrupathunga Road, Bangalore - 560001	haleshr222@gmail.com 9743896433
4.		**Dr. Siddesha J M** Assistant Professor	Division of Biochemistry, School of Life Sciences, JSS Academy of Higher Education & Research, SS Nagar, Mysuru-15	siddeshajm@gmail.com 7019041500
5.	**One Person from Industry**	**Dr.PuneethKumar** Managing Director	Azymus Life science Pvt. Ltd. Kellamballi industrial Area, KIADB, Chamarajanagara	azymus.pharma@gmail.com 8971155575
6.	**Alumnus**	**Ms. Pallavi M R** Assistant Professor	Department of Biochemistry MMK & SDM College, Mahila Maha Vidyalaya, Mysuru	pallavimr1990@gmail.com 9538582629
7.	**Member**	**Ms. Radhika P** Assistant Professor	Department of Biochemistry, SBRR Mahajana First Grade College, Autonomous Jayalakshmipuram, Mysuru-12	radhikap.fgc@mahajana.edu.in 9986585574

Course Structure (NEP 2020)

III Year B.Sc. Biochemistry

Discipline Specific Courses (DSC), Internship (INT)

Course Code, Type and Title		Hours /week		Number of Credits (L:T:P)	Max marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P		C1	C2	C3		
V SEMESTER									
232569	DSC (5) Biochemistry of Biomolecules and Nutrition	4	0	4: 0: 2 (6 credits)	20	20	60	2½ Hours	100
	DSC (5) LAB Qualitative analysis of Biomolecules and their nutritional aspects	0	4		10	15	25	3 Hours	50
232570	DSC (6) Human Physiology and Enzymology	4	0	4: 0: 2 (6 credits)	20	20	60	2½ Hours	100
	DSC (6) LAB Human Physiology and Enzymology	0	4		10	15	25	3 Hours	50
VI SEMESTER									
232669	DSC (7) Metabolism with Clinical Correlations	4	0	4: 0: 2 (6 credits)	20	20	60	2½ Hours	100
	DSC (7) LAB Metabolism with Clinical Correlations	0	4		10	15	25	3 Hours	50
232670	DSC (8) Molecular Biology and Immunology	4	0	4: 0: 2 (6 credits)	20	20	60	2½ Hours	100
	DSC (8) LAB Molecular Biology and Immunology	0	4		10	15	25	3 Hours	50
INT 23INTBIC01	Internship	2	0	2:0:0 (2credits)	50	50	-	-	100

DSC (5) Syllabus for B.Sc. Biochemistry

Semester-V

Course Code:	232569	
Course Title:	**DSC (5) Theory**	**DSC (5) Lab**
	Biochemistry of Biomolecules And Nutrition	**Qualitative analysis of Biomolecules and their nutritional aspects**
Total Course credits (L:T:P) (4:0:2)	**04**	**02**
Total contact hours	**60**	**60**
Hours of teaching/week	**04**	**04**
Formative assessment marks	**40**	**25**
Semester End Assessment marks	**60**	**25**
Exam duration	**2 ½ Hrs**	**3 Hrs**

COURSE OUTCOMES (COs):

- **CO 1:** Develop the ability to classify, depict the structure and describe the chemical properties and functions of carbohydrates. Get acquainted with the basics of nutrition of carbohydrates.
- **CO 2:** Ability to classify amino acids and proteins based on various categories. Depict the structure of amino acids and describe the chemical properties of amino acids, peptides, proteins and sequencing methods of amino acids. Gain the knowledge of nutritional aspects of proteins.
- **CO 3:** Explicate the different types of lipids and their biological role. Acquire the knowledge on composition, types and chemical properties of nucleic acids.
- **CO 4:** Interpret and apply the basic concepts of nutrition and describe the physiological functions of various macro and micronutrients. Acquire the knowledge on nutritional disorders, adulterants and their implications.

Course Content: **DSC (5) - Biochemistry of Biomolecules and Nutrition**	**60Hr**
UNIT 1: Carbohydrates	**15hr**
• Definition, empirical formulae, classification and biological importance. • **Monosaccharides:** Configuration relationship of D-aldoses and D-ketoses. General properties of aldoses and ketoses. Oxidation, reduction, reducing property, addition – HCN, acylation, formation of glycosides, methylation and condensation with phenyl hydrazine. Interconversion of aldoses and ketoses by chemical method. Ascending and descending series by chemical methods.	

Stereochemistry of monosaccharides: (+) and (-), D and L, epimers, anomers and diastereomers. • **Glucose:** Elucidation of open chain structure and ring structure of glucose. Conformation of glucose (only structures), mutarotation. Structure of ribose, galactose and mannose (open chain and Hawarth ring structure) • **Derivatives of monosaccharides:** Structure and biological importance of sugar acids, deoxy sugars, amino sugars, derivatives of amino sugars - neuraminic and muramic acid. • **Disaccharides:** Establishment of structures of Sucrose and Lactose, Biological Importance and structure of Isomaltose, Trehalose and Maltose. • **Polysaccharides:** Partial structure, occurrence and biological importance of Starch, Glycogen, Inulin, Cellulose, Chitin, and Pectin. • **Glycosaminoglycans:** Occurrence, structure of the repeating units and importance of heparin, hyaluronic acid, teichoic acid and chondroitin sulphate. Bacterial cell wall polysaccharide - peptidoglycans. • **Nutrition of Carbohydrates:** Dietary sources, dietary fibers - types, beneficial and adverse effects, protein sparing action, Glycemic Index- importance with examples, Lactose intolerance.	
UNIT 2: Amino acids and Proteins	**15 hr**
• **Amino acids:** Structure and classification of amino acids based on charge, functional group and solubility. Stereoisomerism of amino acids (D & L notation). Reactions of the amino groups with HNO_2, $LiAlH_4$, Ninhydrin, Phenyl isothiocyante, Dansyl Chloride and Flurodinitro benzene. Reaction of carboxyl group with Hydrazine. Chemical properties of amino acids - Zwitterionic property, amphoteric property, pKa and pKb values • **Peptides:** Definition, Peptide bond, structure, and biological importance of Glutathione, Valinomycin and Vasopressin. Synthetic peptides - polyglutamic acid and polylysine • **Proteins:** Classification of proteins based on solubility, structure and functions with examples. Forces that stabilise the structure of proteins. Primary structure of proteins, Determination of amino acid composition, Methods of sequencing amino acids - Determination of N-terminal amino acids by Sangers method and Edman degradation method, C-terminal amino acids by hydrazinolysis method and enzymatic method (carboxypeptidase). • Secondary Structure – α helix, β-sheet and β-bend.	

• Tertiary and quaternary structures, 3D structure of haemoglobin, denaturation and renaturation of proteins. Anfinsen's experiment. • **Nutritional aspects of Proteins:** Dietary sources, essential amino acids, Nutritional classification, Nutritional value of proteins – PER, NPU and Biological value of proteins (BV), Nitrogen balance, mutual supplementation of proteins.	
UNIT 3: Lipids and Nucleic acids	**15 hr**
• **Lipids:** Classification and biological role, Fatty acids - Structure and nomenclature of saturated and unsaturated fatty acids. **Acylglycerols**: Mono, di and triacylglycerols. Saponification, saponification value, iodine value, acid value, Peroxide value and significance. Rancidity-types (oxidative and hydrolytic rancidity) and prevention of rancidity. **Phosphoglycerides**: Structure and biological importance of lecithin (phosphatidyl choline), cephalins, phosphatidy linositol, plasmalogens and cardiolipin. **Sphingolipids**: Structure and importance of sphingomyelin. **Glycosphingolipids:** Composition and biological importance of gangliosides and cerebrosides. **Eicosanoids:** Definition, Prostaglandins-types, structure of PGE_2 and $PGF_2\alpha$. Biological importance of thromboxanes (TX_2), leukotrienes and lipoxins. **Plasma lipoproteins:** Types and functions. **Nutritional aspects of Fats:** Dietary sources of fats, visible and invisible fat, trans fats, non-essential fatty acids, essential fatty acids - types with examples and functions. Role of omega 3 fatty acids - DHA and EPA. • **Nucleic acids:** Composition of DNA and RNA. Nucleosides and Nucleotides, Chargaff's rule, Watson and Crick model of DNA, Physico-chemical properties of Nucleic acids: Effect of heat on DNA (denaturation and renaturation), Melting of DNA (Tm) factors affecting (Tm), UV absorption and Hyperchromic effect. Effect of alkali and acid on DNA. Variants of DNA (A, B and Z form). Structure and functions of types of RNA - mRNA, tRNA and rRNA. Secondary structures of tRNA – Clover leaf model.	
Unit 4: Nutrition	**15 hr**
• **Introduction:** Concept of Nutrition, calorific value of foods and its Determination (Bomb calorimeter). Respiratory quotient, Basal	

Metabolic Rate, factors affecting BMR. Specific dynamic action (SDA) of foods.

- **Introduction:** Concept of Nutrition, calorific value of foods and its determination (Bomb calorimeter). Respiratory quotient, Basal Metabolic Rate, factors affecting BMR. Specific dynamic action (SDA) of foods.
- **Vitamins:** Biochemical functions and deficiency symptoms of Thiamine, Riboflavin, Niacin, Pantothenic acid, Pyridoxine, Biotin, Folic acid, Vit-B_{12} and Vit - C. Fat soluble vitamins - A, D, E and Vit-K.
- **Mineral Metabolism:** Physiological functions and deficiency disorders of Ca, P, Na, K, Cl, Mg, Fe and I
- **Protein energy malnutrition (PEM):** Kwashiorkar and Marasmus
- **Antinutritional factors:** Sources and harmful effects of anti-vitamins (Eg. Avidin, Dicoumarol), Natural toxicants (Eg. Lathyrus sativa) and adulterants (Eg. butter yellow, lead chromate)
- **Nutraceuticals:** Introduction, functional foods and pre and pro-biotics in health and disease prevention.

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- https://www.medicalnewstoday.com
- https://www.med-health.net/Lifestyle-Diseases.html

DSC (5): Practical Syllabus

Course Content - DSC (5): Lab **Qualitative analysis of Biomolecules and their nutritional aspects**	**60Hr**
List of experiments to be conducted	
I. Qualitative analysis of Biomolecules: **a) Carbohydrates:** Monosaccharides (Glucose and Fructose), Disaccharides (lactose, maltose, sucrose), polysaccharides (starch/glycogen). **b) Proteins**: Precipitation reactions of proteins, Colour reactions of proteins, Colour reactions of amino acids like tryptophan, tyrosine, cysteine, methionine, arginine, proline and histidine. **c) Lipids:** solubility test, acrolein test, Salkowski test and Lieberman-Burchard test. **d) Nucleic acids:** DPA test (ribose), Orcinol test (deoxy ribose)	
II. Experiments on Nutrition: 1. Detection of food adulterants in various food stuffs. 2. Determination of moisture content of food. 3. Extraction and estimation of Vitamin C in biological sample 4. Extraction and estimation of Calcium in ragi powder. 5. Estimation of Phosphorous from food sample. 6. Estimation of amino acid by formal titration method. 7. Extraction and estimation of iron in mustard seeds.	

8. Determination of Saponification value of oil/fat.
9. Determination of iodine value of oil/fat.

References:

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2. Biochemical methods, S.Sadasivam, A. Manickam, 3rd Edition, New Age International Pvt Ltd, 2007
3. An Introduction to Practical Biochemistry, David Plummer, 3rd edition 2017
4. Laboratory manual in Biochemistry, J.Jayaraman 2011.

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COURSE ARTICULATION MATRIX: 232569

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO 11	PO 12
CO1	3	1	2	2	1	1	1	1	1	1	1	1
CO2	3	2	2	2	2	1	1	1	1	1	1	1
CO3	3	2	2	2	2	1	1	1	1	1	1	2
CO4	3	2	2	2	1	1	1	1	1	1	2	3
Weighted average	**3**	**1.75**	**2**	**2**	**1.5**	**1**	**1**	**1**	**1**	**1**	**2.5**	**1.75**

DSC (6) Syllabus for B.Sc. Biochemistry

Course Code:	232570	
Course Title:	DSC (6): Human Physiology and Enzymology	
	Theory	Practical
Total Course credits (L: T:P) (4:0:2)	04	02
Total contact hours	60	60
Hours of teaching/week	04	04
Formative assessment marks	40	25
Semester End Assessment marks	60	25
Exam duration	2 ½ Hrs	3 Hrs

COURSE OUTCOMES (COs):

- **CO 1**: Get acquainted with the anatomy, structure and physiological functions of nervous system, respiratory system, circulatory system, muscle tissue and their mechanisms.
- **CO 2:** Ability to describe the structure and physiological functions of bone, cartilage, excretory and hepatic system. Elucidate the role of digestive enzymes functions of various endocrine hormones, their mechanism and regulation in the body.
- **CO3:** Illustrate the general characteristics, nature of different types of enzymes and their mechanism of action. Develop competence in isolating various enzymes and calculate its activity and specific activity.
- **CO 4:** Analyze the various parameters of enzyme kinetics, factors effecting its activity and get acquainted with the concept of enzyme inhibition. Develop skills to calculate the kinetic parameters of enzyme and represent it graphically.

Course Content: **DSC (6) Human Physiology and Enzymology**	**60 Hr**
UNIT 1:	**15 hr**
• **Introduction**: Basic body plan in humans & Location of organs. • **Nervous System**: Brief outline of nervous system, Types of Neurons, generalized structure of multipolar neuron, Action potential & resting potential. Synapse, types of synapses, mechanism of nerve impulse transmission along the axon, synaptic transmission. Neurotransmitters, types - Excitatory & Inhibitory with examples. • **Respiratory system**: Respiration, Structure and functions of lungs,	

Mechanism of respiration (inspiration and expiration), Exchange of gases, Biochemical events in the transport of gases and the factors affecting the exchange of gases, Role of lungs in acid-base balance. Hypoxia, emphysema. • **Circulatory system:** Components of circulatory system (heart, blood vessels and blood), Structure and functions of heart. Blood vessels – types and functions. Phases of Cardiac cycle, heart rate, cardiac output. Blood pressure - types, measurement and its regulation. **Blood:** Composition, volume, structure and functions of RBC, WBC and platelets. Mechanism of blood coagulation. Cerebrospinal fluid, lymph and their functions. Blood brain Barrier. • **Muscular system:** Types of muscles and their structure. Ultrastructure of skeletal muscle. Contractile and regulatory proteins of muscle. Sliding filament model of skeletal muscle contraction.	
UNIT 2:	**15 hr**
• **Bone and Cartilage:** Composition of bone, types of bones, Components of long bone, Growth and remodelling of long bone. Factors affecting its growth. Cartilage and its types. • **Digestive System:** Anatomy of GIT and accessory organs, digestive secretions, Digestion, absorption & transport of carbohydrates, lipids and proteins. Role of various enzymes involved in digestive process. • **Excretory system:** Brief outline of various excretory organs and their excretory products, Structure of nephron, formation of urine – Glomerular filtration, tubular reabsorption and secretions. Role of kidneys in acid-base balance. Regulation of kidney functions. • **Hepatic System:** Liver, Structure of a liver lobule. Role of liver in metabolic, storage and Detoxification. • **Endocrine system:** Outline of Endocrine organs and glands, General characteristics of hormones, classification of hormones based on chemical nature, solubility and nature of action. Physiological functions of the hormones of hypothalamus, pituitary, adrenal, thyroid, pancreas, gonads. Hormonal regulation by feedback mechanism. General mechanism of action of peptide and steroid hormones. Concept of second messengers. E.g.: cAMP, DAG and IP3.	
UNIT 3:	**15 hr**
• **Introduction to enzymes:** Definition, Nature of enzymes - protein	

and non-protein (ribozyme), Characteristics of enzymes. Holoenzyme - apoenzyme and prosthetic group, Cofactors & Coenzymes - definition with examples. IUBMB classification of enzymes with examples. Enzyme activity & Units of enzyme activity, specific activity of enzymes. • Monomeric and oligomeric enzymes, multifunctional enzymes (Fattyacid synthase), multi-enzyme complexes (PDH) and isoenzymes (lactate dehydrogenase). Immobilized enzymes-methods and applications. • **Features of enzyme catalysis**: Catalysis, reaction rates and thermodynamics of reaction. Activation energy and transition state theory. Catalytic power, specificity of enzymes, concept of active site, Theories of enzyme catalysis- Fischer's lock and key hypothesis, Koshland's induced fit hypothesis.	
UNIT 4:	**15 hr**
• **Enzyme kinetics of single substrate reactions:** Michaelis-Menten equation, equilibrium constant - mono substrate reactions, relationship between initial velocity and substrate concentration**.** Factors affecting the rate of enzyme catalysed reactions - enzyme concentration, substrate concentration, pH, temperature and metal ions. Lineweaver- Burk plot. Determination of Vmax & Km from L-B plot and their significance. K_{cat} and turnover number. • **Enzyme Inhibition:** Definition, types of inhibition -reversible and irreversible inhibition. Reversible inhibition- competitive, uncompetitive, non-competitive with graphical representations using L-B plots, Evaluation of Km and Vmax in presence of inhibitor (mixed and substrate). Irreversible inhibition - Suicide inhibition, Antibiotics as inhibitors - penicillin. • **Clinical Enzymes:** Alkaline phosphatase, serum transaminases (SGPT & SGOT), Cardiac injury profile- CPK and LDH.	
References: 1. Chatterjee C C, Human physiology, Medical allied Agency. New Delhi 2020 2. Gerard J Tortora, Bryan H Derrickson. Principles of anatomy and physiology, 13th edition, John Wiley & Sons 2000 3. Guyton and Hall, Text book of medical physiology,10th edition, Elsevier Health Sciences 2015 4. Sembulingam K & Prema Sembulingam, Essentials of medical physiology, 3rd edition, Jaypee Brothers, 2019	

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9. Palmer, Understanding enzymes, 4thedition, Prentice Hall/Ellis Horward, London 2000
10. Price, Nicholas C and Lewis Stevens. Fundamentals of Enzymology. Oxford Science Publications. Second edition. New York, 2010
11. Buchholz, Klaus, Volker Kasche, and Uwe Theo Borns cheuer. Biocatalysts and enzyme technology. JohnWiley & Sons, 2012.
12. Voet, Donald, Judith G. Voet, and Charlotte W. Pratt. "Fundamentals of Biochemistry. "NewYork: JohnWiley & Sons 2008.
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DSC (6): Practical Syllabus

Course Content **DSC (6): Human Physiology and Enzymology**	**60Hr**
List of experiments to be conducted	
Part A: Human Physiology 1. Determination of Blood clotting time 2. Enumeration of RBC and WBC count using Haemocytometer 3. Separation of Serum and Plasma from Blood 4. Estimation of percentage of haemoglobin content in blood 5. Determination of Blood pressure by Sphygmomanometer.	

Part B: Enzyme Assays

1. Salivary amylase/β- amylase

a. Determination of activity and specific activity of salivary amylase by DNS method. (Construction of Maltose/glucose calibration curve by DNS method)

b. Determination of optimum temperature of salivary amylase.
c. Determination of pH optimum of salivary amylase.
d. Determination of time kinetics of salivary amylase
e. Determination of Km and Vmax of salivary amylase.
f. Effect of Sodium chloride on amylase

2. Isolation of acid phosphatase and demonstration of its activity by PNP method.
3. Isolation of Urease and demonstration of its activity.
4. Isolation of invertase and demonstration of its activity.

References:

1. Text book of Practical Physiology, C.L. Ghai, Jaypee brother's medical publishers, New Delhi, 10th edition 2022
2. Text book of Medical Physiology - C, Guyton and John.E.Hall. Miamisburg, OH, U.S.A, 12thedition 2011
3. Text book of Practical Physiology, C.L.Ghai, Jaypee brother's medical publishers, New Delhi, 10thedition 2022
4. Laboratory manual in Biochemistry, Jayaraman J, New Age International publications, 2011
5. Practical Manual of Biochemistry, Sattanathan G., Swaminathan P and Balasubramanian B. Sky fox press, 2020
6. Practical manual of Biochemistry, S. P Singh, 7th edition, CBS publications, 2013.
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8. Palmer, Understanding enzymes, 4th edition, Prentice Hall/Ellis Howard, London 2000
9. "Enzymes: Biochemistry, Biotechnology, Clinical Chemistry" by Trevor Palmer.

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COURSE ARTICULATION MATRIX: 232570

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO 11	PO 12
CO1	3	2	1	2	1	2	1	1	1	1	1	2
CO2	3	2	1	2	1	2	1	1	1	1	1	2
CO3	3	3	2	2	2	1	1	1	2	1	2	1
CO4	3	3	2	2	2	1	1	1	2	1	2	2
Weighted average	**3**	**2.5**	**1.5**	**2**	**1.5**	**1.5**	**1**	**1**	**1.5**	**1**	**1.5**	**1.75**

DSC (7) Syllabus for B.Sc. Biochemistry

Semester-VI

Course Code:	232669	
Course Title:	DSC (7) Metabolism with Clinical Correlations	
	Theory	Practical
Total Course credits (L:T:P) (4:0:2)	04	02
Total contact hours	60	60
Hours of teaching/week	04	04
Formative assessment marks	40	25
Semester End Assessment marks	60	25
Exam duration	2 ½ Hrs	3Hrs

COURSE OUTCOMES (COs):

- **CO 1:** Get acquainted with the principle of thermodynamics. Depict the structure of mitochondria and comprehend the role of ETC complexes in respiratory chain. Able to describe chemiosmosis hypothesis of ATP synthesis.
- **CO 2:** Acquire the knowledge on compartmentalization of metabolic pathways. Elucidate various metabolic pathways of carbohydrate and harvest its energetics and regulatory steps. Interpret the disorders associated with errors in carbohydrate metabolism.
- **CO 3:** Schemate biosynthetic and oxidation pathways of lipid metabolism and calculate its energetics. Describe the action of nucleases and elucidate the catabolic and anabolic pathways of nucleic acids. Interpret the disorders associated with errors in lipids and nucleic acid metabolism metabolism.
- **CO 4:** Comprehend the general reactions of amino acids and their significances. Schemate urea cycle, catabolic and anabolic pathways of amino acids. Illustrate the inherited disorders associated with the error in the amino acid metabolism.

Course Content: DSC (7) – Metabolism with Clinical Correlations	**60Hr**
UNIT 1: Bioenergetics	**15 hr**
Definition, significance of bioenergetics, Laws of Thermodynamics: first and second law. Concept of enthalpy, entropy and free energy change, equilibrium constant. Coupled reactions. High energy compounds: ATP - structural features, ATP cycle, its free energy change during hydrolysis. Ultra-structure of mitochondrion, Electron transport chain and their complexes Complex I, II, III and IV. Uncouplers and inhibitors of respiration (Rotenone, Antimycin, Cyanide and 2,4 DNP) Oxidative phosphorylation: Proton gradient generation, redox loop, Q cycle, Proton pumping. P/O ratio. Outline of	

- Peter Mitchell's Chemiosmotic hypothesis. Substrate level phosphorylation with examples.	
UNIT 2: Metabolism of Carbohydrates	**15 hr**
• **Introduction:** Metabolism, phases of metabolism: anabolism and catabolism, compartmentalization of metabolic pathways • **Carbohydrate Metabolism:** Glycolysis, energetics and regulatory steps of glycolysis. Entry of other carbohydrates (Fructose, galactose, mannose and Lactose) into glycolytic pathway. Fates of pyruvate – conversion of pyruvate to lactate, alcohol and acetyl Co-A. Citric acid cycle, it's energetics and regulatory steps, Amphibolic integrating roles of TCA cycle. Anaplerotic reactions. Cori cycle. Gluconeogenesis, Pentose phosphate pathway and its significance. Glycogen metabolism – glycogenolysis, glycogen synthesis. • **Inborn errors of Carbohydrate Metabolism:** Von-Gierke's and Cori's disease.	
UNIT 3: Metabolism of Lipids and Nucleic acids	**15 hr**
• **Metabolism of Lipids:** Introduction, hydrolysis of triacylglycerols, transport of fatty acids into mitochondria, Oxidation of fatty acid – α, β and ω types, β- oxidation of saturated and unsaturated fatty acids, Energetics of β-oxidation. Schematic representation of biosynthesis of even number saturated fatty acids. Elongation of Fatty acid (Mitochondrial elongation). Biosynthesis of TAG, Phospholipids (Lecithin and Cephalin). Cholesterol Metabolism (synthesis and degradation). • **Inborn errors of Lipid Metabolism:** Niemann-Pick disease and Gaucher disease • **Metabolism of Nucleic acids:** Degradation of nucleic acids, action of nucleases: DNase I and II, RNase and phosphodiesterases. Catabolism of purines and pyrimidines. Salvage and Denovo biosynthetic pathways of purine and pyrimidine nucleotides. Conversion of ribonucleotides to deoxy ribonucleotides. • **Inborn errors of Nucleic acid Metabolism:** Gout, Lesch-Nyhan syndrome	
UNIT 4: Metabolism of Amino acids	**15 hr**
• **Metabolism of Amino acids:** General reactions of amino acid degradation – Transamination, deamination (oxidative and non-oxidative), decarboxylation, desulphation and their significances. Ketogenic and glucogenic amino acids. Urea cycle – energetics and	

its significance. Regulations of urea cycle (coarse, fine/allosteric, compartmentalization). Inherited disorders of urea cycle – Hyperammonemia Type I and Type II, Hyperargeninemia and Citrullinemia. Synthesis and catabolism of alanine, serine and cysteine.

- **Inborn errors of amino acid Metabolism:** Phenylketonuria, alkpatonuria and albinism.

References:

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2. Lehninger-Principles of Biochemistry; D L Nelson and M M Cox 6th Edn. Mac millan Publications 2012
3. Biochemistry the chemical reactions of living cells, David E Metzler, 2nd Edition, Elsevier Academic Press.
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5. Biochemistry, Jeremy M. Berg, John L. Tymoczko, Lubert Stryer, Freeman and company, 7th Edition, 2010.
6. Harper's Illustrated Biochemistry, Victor W Rodwell, et.al, 31st edition, Mc Graw Hill Education Lange ® 2018
7. Rastogi S.C, V.N. Sharma, Anuradha Tanden, Concepts in molecular biology, 1993.
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9. Deb, A.C., Fundamentals of Biochemistry, New Central Agency, Calcutta, 3rd Edition, 1989.
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DSC (7): Practical Syllabus

Course Content - DSC (7) – Metabolism with Clinical Correlations	**60 Hr**
List of experiments to be conducted	
Part A: Colorimetric estimations **1.** Glucose by Anthrone method. **2.** Ketoacid (Pyruvate) by DNPH method **3.** Amino acid by Ninhydrin method. **4.** Protein by Biuret method. **5.** Protein by Lowry's method. **6.** Uric acid by PMA method. **7.** Urea by DAMO method. **8.** Creatinine by Jaffe's method. **9.** Phosphorous by Fiske and Subbarow's method. **10.** Iron by Wong's method.	
Part B: Qualitative analysis of constituents of Urine **1. Qualitative analysis of normal constituents of urine:** • Organic: constituents: urea, uric acid, creatinine and amino acid. • Inorganic constituents: chlorides, sulfates, phosphates and ammonia **2. Qualitative analysis of Abnormal constituents of urine:** Abnormal constituents -glucose, albumin, bile pigments, bile salts and ketone bodies	
References: **1.** Practical manual in chemistry and biochemistry- Victor J templa and Samsung Grant **2.** Practical manual in Clinical biochemistry- Dr Rjeshwari, Dr Aliya Nusrath **3.** Intrumental methods of analysis – practical manual by Dr Muralidhara Rao AVN Swamy, and Dr Daraneeshwara swamy	

4. Colorimetric analysis | Mark Buluma Eugine Academia.edu
5. A guide to colorimetry - Cole-Parmar and Cole-Parmer
6. Colorimetric Analysis, Hardcover – 4 February 2019 by F. D. Snell
7. Analytical Chemistry from Laboratory to Process Line by Gennady E. Zaikov
8. Arneson Clinical Chemistry A Laboratory Perspective, by Wendy Arneson.
9. Practical Clinical Biochemistry, Methods and Interpretations, by Ranjan Chawla.
10. Practical Biochemistry, Geetha Damodaran, Jaypee, 2011
11. An Introduction to Practical Biochemistry, David Plummer, 3rd edition 2017
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COURSE ARTICULATION MATRIX: 232669

PO / CO	Program Outcomes											
	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO 11**	**PO 12**
CO1	3	2	1	2	1	2	1	1	2	1	1	2
CO2	3	2	1	2	1	1	1	1	2	1	1	2
CO3	3	2	1	2	1	1	1	1	2	1	1	2
CO4	3	2	1	2	1	1	1	1	2	1	1	2
Weighted average	**3**	**2**	**1**	**2**	**1**	**1.25**	**1**	**1**	**2**	**1**	**1**	**2**

DSC (8) Syllabus for B.Sc. Biochemistry

Course Code:	232670	
Course Title:	DSC (8) Molecular Biology and Immunology	
	Theory	Practical
Total Course credits (L:T:P) (4:0:2)	04	02
Total contact hours	60	60
Hours of teaching/week	04	04
Formative assessment marks	40	25
Semester End Assessment marks	60	25
Exam duration	2 ½ Hrs	3 Hrs

COURSE OUTCOMES (COs):

- **CO1:** Able to justify the nucleic acids as genetic carriers and describe the central dogma of molecular biology. Explicate the mechanism of DNA replication, different types of mutations and illustrate the mutagenic effect of various mutagens.
- **CO2:** Illustrate the mechanisms spanning from transcription to translation. Apply the knowledge in analyzing problems at their molecular level. Employ the molecular biology techniques to analyze the changes at gene level for the development of new therapies for problem solving.
- **CO3:** Acquire the knowledge on scope and various techniques of genetic engineering & apply the principle of various blotting techniques in separation of nucleic acids. Employ the techniques of genetic engineering in the production level benefiting various fields.
- **CO4:** Develops ability to describe the types of immunity with examples, characteristics, types of antigens and antibodies. Illustrate the role of immunologically important organs and cells, acquire knowledge on concept of immunization and preparation of vaccines and develop competence in handling various immunological techniques. Gain ability to describe various immunological disorders.

Course Content: DSC (8) Molecular biology and Immunology	60Hr
UNIT 1: DNA Replication and Mutation	**15 hr**
• **Introduction:** Nucleic acids as genetic information carriers, experimental evidences – Griffith, Avery Macleod and McCarty experiment, Hershey and Chase experiment. Central dogma of molecular biology and its modification. • **Replication:** DNA replication, types of replications - conservative,	

semi conservative and dispersive. Meselson and Stahl experiment. Enzymes and protein factors involved in replication, Mechanism of semi-conservative replication in prokaryotes. • **Mutation:** Definition, Somatic and germline mutation, spontaneous and induced mutation, Concept of gene mutation- a) Point mutation- silent, missense and nonsense mutation b) frameshift mutation (addition and deletion). Mutagens and types of mutagens. Effect of mutagens -effect of HNO_2, alkylating agents, intercalating agents and UV radiation.	
UNIT 2: Transcription, Genetic code, Translation and Regulation of Gene expression	**15 hr**
• **Prokaryotic Transcription:** Structure of Prokaryotic gene and role of RNA polymerase. Mechanism of transcription - Initiation, elongation and termination (rho dependent and rho independent). Post transcriptional modifications (eukaryotes) – capping, splicing and poly adenylation. • **Genetic code:** General features, wobble hypothesis. • **Prokaryotic Translation:** Mechanism of translation- Activation of Amino acids, amino acyl tRNA synthesis. Initiation, elongation and termination of protein synthesis. Inhibitors of protein synthesis. Post translational modifications. • **Regulation of Gene expression:** General aspects of regulation, Gene expression in prokaryotes; inducible and repressible systems - concept of Lac operon and trp operon. Functional unit in a typical eukaryotic gene – Promoter, introns and exons.	
UNIT 3 : Genetic Engineering	**15 hr**
• **Introduction:** Historical development, aim and scope of genetic engineering. Isolation of DNA, Restriction endonucleases –Types, staggered cut and blunt end cut • **Outline techniques of Genetic Engineering**: Cutting of genomic DNA, Vectors- plasmid (pBR 322), bacteriophage, definition and examples of cosmids, phagemid and plant vectors. Insertion of foreign DNA into vectors- linkers, adaptors and homopolymer tailing. Transfection of vectors into host cells. cDNA. Principle and applications of polymerase chain reaction. • **Blotting techniques**: Principle and applications of Southern blotting, Northern blotting, Western blotting, Dot blot technique and DNA finger printing. • **Applications of Genetic engineering -** Transgenic plants, transgenic animals and gene therapy. Human genome project.	

UNIT 4: Immunology	15 hr
• **Overview of the Immune system:** Immunity, types - Innate and acquired immunity. (Passive and active immunity). Cellular and humoral immunity. Role of immunologically important organs and cells - bone marrow, thymus, spleen and lymphocytes. Cellular components of immune system, Formation and functions of T & B Lymphocytes. Helper T-cells and killer T-cells. • **Antigens:** Definition, types, chemical nature and antigenicity. Epitopes, haptens and adjuvants • **Antibodies:** Definition, types and structure of a typical immunoglobulin (IgG), paratope. Polyclonal and monoclonal antibodies. Production and applications of monoclonal antibodies. • **Immunization:** Vaccines and their preparations**,** primary and secondary immune response. • **Immunological disorders and Hypersensitivity reactions:** Autoimmune disorder - Definition, example - systemic lupus erythematous, Hypersensitivity reactions and its types • **Ag-Ab reactions and Immunological techniques:** Formation of antigen-antibody complex. Agglutination and precipitation reactions. Principle, procedure and applications of immunodiffusion, RIA and ELISA.	

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1. Owen, Judith A., Jenni Punt, and Sharon A. Stranford. Kuby immunology. New York: W H Freeman, 2013.
2. Delves, Peter J., Seamus J. Martin, Dennis R. Burton, and Ivan M. Roitt. & Roitt's essential immunology. Vol. 20. John Wiley & Sons, 2011.
3. Principles of cell and molecular biology 2nd edition – Lewis J Kleinsmith, Valerie M Kish, February, 1995
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DSC (8) - Practical Syllabus

Course Content–DSC (8): Molecular biology and Immunology	**60Hr**
List of experiments to be conducted	
1. Isolation of DNA from banana/endosperm of coconut or any other source. **2.** Isolation of RNA from spinach leaves/any other source. **3.** Determination of lambda max of proteins and nucleic acid **4.** Determination of purity of nucleic acids. **5.** Estimation of DNA by DPA method **6.** Estimation of RNA by orcinol method. **7.** Electrophoretic separation of nucleic acids by Agarose gel electrophoresis. **8.** Identification of blood group and Rh factor by Hemeagglutination reaction **9.** Determination of Antigen specificity by Single Radial immuno-diffusion assay (SRID) **10.** Determination of Antigen specificity/Ag-Ab reaction by Outcherlony double diffusion method **11.** Demonstration of pregnancy test **12.** Purification of Immunoglobulin G from egg yolk. **13.** Demonstration of Western blotting. **14.** Demonstration of WIDAL test.	
References:	

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COURSE ARTICULATION MATRIX: 232670

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO 11	PO 12
CO1	3	2	1	2	1	1	1	1	2	1	1	2
CO2	3	2	1	2	2	1	1	1	2	1	1	2
CO3	3	2	1	2	1	1	1	1	2	1	1	2
CO4	3	2	1	2	2	2	1	1	2	1	1	2
Weighted average	3	2	1	2	1.5	1.25	1	1	2	1	1	2

Internship

B.Sc. Biochemistry

Semester - VI

Course Code:	23INTBIC01
Course Title:	Internship
Total Course credits	02
Total contact hours	90
Formative assessment marks	C1 – 50
	C2 – 50
	Total = 100 marks

Note: This course will run as per the guidelines defined by the BoS Biochemistry, University of Mysore, Mysuru and the same is approved by BoS, Biochemistry, SBRR, Mahajana First Grade College, Autonomous Mysuru.

COURSE OUTCOMES (COs):

- **CO1:** Integrate Theory and Practice of the area selected for Internship to explore the Career Opportunities prior to Graduation
- **CO2:** Develop Communication, Interpersonal, Work Habits, Attitude, technical and other Critical Skills required for a job.

COURSE ARTICULATION MATRIX – 23INTBIC01

PO / CO	Program Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO 11	PO 12
CO1	3	3	3	3	3	-	1	1	3	3	2	2
CO2	3	3	3	3	3	2	1	1	3	3	2	2
Weighted average	**3**	**3**	**3**	**3**	**3**	**2**	**1**	**1**	**3**	**3**	**2**	**2**

Continuous Formative Evaluation/Internal Assessment (DSC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is **40:60** for IA and Semester End Theory Examinations respectively and **50:50** for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	**100 Marks**	**50 Marks**
Continuous Assessment – 1 (C1)	**20 Marks**	**10 Marks**
Continuous Assessment – 2 (C2)	**20 Marks**	**15 Marks**
Semester End Examination (C3)	**40 Marks**	**25 Marks**

Evaluation Process of IA Marks shall be as follows:

- The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.
- The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.
- During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.
- In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.
- The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

Theory Formative assessment	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/ Presentation/ Assignment/ Activity/ Case Study/ Field Work/ Project Work/ Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.

Practical Formative assessment	C1 Marks	C2 Marks	Total Marks
Session Test	**10**	-	**10**
Record/ Assignment/ Activity/ Case Study/ Field Work/ Project Work/ Quiz etc.	**-**	**15**	**15**
Total	**10**	**15**	**25**

- For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.
- The teachers concerned shall conduct test/seminar/case study etc., the students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department.
- Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till

the announcement of the results of the examination of the concerned semester.

- The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.
- The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.
- There shall be no minimum in respect of internal assessment marks.
- Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

B.Sc. Biochemistry Semester- V

Practical Examination- Scheme of Valuation (2023-24)

(DSC 5): Qualitative analysis of Biomolecules and their Nutritional aspects Practical 5

Duration: 3-hour **Max. Marks: 25**

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The students will be evaluated on the basis of skill, comprehension and recording the results.
The student has to compulsorily submit the practical record during C1and C2. For C3, Students must submit completed practical records duly signed by batch teachers and certified by HOD at the time of examination. (No evaluation of record)

The student is evaluated for **C1 and C2** respectively as per the following scheme:

Heading	Marks
C1: Minor Experiment /procedure writing	**10**
C2: Major Experiment + Record	**10 + 05 = 15**
Total	**25**

The student is evaluated for **25 marks** in **C3** as per the following scheme.

- **PART- A: Minor Experiment/ Procedure writing** **Marks - 08**
- **PART- B: Major Experiment** **Marks - 12**
- **PART- C: Viva Voce** **Marks - 05**

PART-A: **Marks-08**

Any ONE of the following experiments is to be given for conduction.

1. Detection of food adulterants in various food stuffs.
2. Estimation of Vitamin C in biological sample
3. Estimation of Calcium extracted from ragi powder.
4. Estimation of amino acid by formal titration method.
5. Estimation of iron extracted from mustard seeds.

OR

Any ONE of the following experiments is to be given for procedure writing

1. Determination of Moisture content of food.
2. Determination of Saponification value of oil/fat.

3. Determination of iodine value of oil/fats

PART A: Assessment of Experimental results

- For **Detection of food adulterants** (any 4 samples to be given) …**4 x 2 =8**

(**Edible** oil, ghee, tea powder, pepper, dhal, chili powder, butter, milk, sweet)

- For **estimation** of amino acid/ Ascorbic acid / iron/ calcium (Normality of the titrant for the experiment given for conduction is to be specified by the examiner)

Principle and Reaction ……. 03 marks

Discrepancy in titre value	**Estimation Marks (5)**
±0.1 - 0.3ml	4m
±0.4 - 0.7ml	3m
±0.8 - 1.0ml	2m
Any other value	1m
Calculation	1m

- For **procedure writing** of determination of saponification value/ iodine value of an oil/fat /determination of moisture content of food and Estimation of total sugars in food sample.

Principle and formulae …..... 03 marks
Procedure writing…… 05 marks

PART B: Assessment of Experimental results **Marks 12**

Any **ONE** of the following biomolecules is to be given for qualitative analysis.

I. Qualitative analysis of Carbohydrates.

The candidate has to identify the given carbohydrate and report it.

[Monosaccharides- (Glucose, Fructose), Disaccharides (Lactose, Maltose)]

Assessment of Experimental results

- Identification of biomolecule -Molisch test…… **1M**
- Iodine test……..... **1M**
- Reducing tests (min 2 test) ……..... **3M**
- Distinguishing test between Mono and Disaccharides …. **1M**
- Distinguishing test between Aldose/Ketose (mono) **1M**
- Osazone test ……..... **3M**

- **Report:**

  Identification and Structure (Monosaccharides)……..... **2M**

  Identification and Structure (Disaccharides)……. **3M**

II. Qualitative analysis of proteins and amino acids.

Any **ONE** of the Protein (**albumin/ BSA**)/ Amino acids is to be given for analysis

Assessment of Experimental results:

- For **Protein** analysis:

- Identification of biomolecule (Molisch and Biuret test) …. **2M**
- Protein Precipitation test (any 02) **2M**
- Xanthoproteic test …….…….....**1M**
- Identification of any 3 amino acids……...….....**6M**
- Report ……...……....**1M**

- For **amino acid** analysis:

  (Tyrosine, Tryptophan, Arginine, Cysteine)

- Identification of biomolecule (Molisch and Ninhydrin test) ….**1M**
- Xanthoproteic test ……**1M**
- Identification tests for amino acids (4 tests) …….....**8M**
- Structure …….... **1M**
- Report …… **1M**

B.Sc. Biochemistry Semester V

Practical Examination - Scheme of Valuation (2023-24)

(DSC 6): Human Physiology and Enzymology- Practical 6

Duration: 3-hour **Max. Marks: 25**

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The students will be evaluated on the basis of skill, comprehension and recording the results.

The student has to compulsorily submit the practical record during C1and C2. For C3, Students must submit completed practical records duly signed by batch teachers and certified by HOD at the time of examination. (No evaluation of record)

The student is evaluated for **C1**and **C2** respectively as per the following scheme:

Heading	Marks
C1: Procedure writing (2)	**10**
C2: Major Experiment + Record	**10 + 05 = 15**
Total	**25**

The student is evaluated for **25 marks** in **C3** as per the following scheme

- **PART-A: Procedure writing** **Marks - 05**
- **PART-B: Major Experiment** **Marks - 15**
- **PART-C: Viva Voce** **Marks - 05**

PART- A: **Marks- 05**

Any ONE of the following experiments is to be given for procedure writing.

1. Determination of Blood clotting time
2. Enumeration of RBC and WBC count using Hemocytometer
3. Separation of Serum and Plasma from Blood
4. Estimation of percentage of haemoglobin content in blood
5. Determination of Blood pressure by Sphygmomanometer.

PART- B: Major Experiment **Marks- 15**

Any ONE of the following enzyme assays is to be given for conduction.

1. Salivary amylase/β- amylase

a. Determination of activity and specific activity of salivary amylase by DNS method. (Construction of Maltose/glucose calibration curve by DNS method)
b. Determination of optimum temperature of salivary amylase.
c. Determination of pH optimum of salivary amylase.
d. Determination of time kinetics of salivary amylase
e. Determination of Km and Vmax of salivary amylase.
f. Effect of Sodium chloride on amylase

2. Isolation of acid phosphatase and demonstration of its activity by PNP method.
3. Isolation of Urease and demonstration of its activity.
4. Isolation of invertase and demonstration of its activity.

Assessment of Experimental results…… 15 Marks

- For determination of Activity and Specific activity of Salivary amylase. (The protein value is to be specified by the examiner)

Principle……....**3M**
Tabular column……... **2M**
Conduction of Experiment ……...**2M**
Calculation……**3M**
Graph…….**2M**
Result……**3M**

- For determination of activity of acid phosphatase/ Urease/ invertase.

Principle……....**3M**
Tabular column……... **2M**
Conduction of Experiment ……...**2M**
Calculation……**3M**
Graph…….**2M**
Result……**3M**

% Error	Marks awarded
< 10%	3
10-15%	2
Any other value	1

- For determination of Optimum time, pH, time, temperature, effect of NaCl

Principle……....**3M**
Tabular column……... **3M**
Conduction of Experiment ……...**3M**
Graph…….**4M**
Result……**2M**

B.Sc. Biochemistry Semester VI

Practical Examination - Scheme of Valuation (2023-24)

(DSC 7): Metabolism with Clinical Correlations- Practical 7

Duration: 3-hour **Max. Marks: 25**

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The students will be evaluated on the basis of skill, comprehension and recording the results.

The student has to compulsorily submit the practical record during C1and C2. For C3, Students must submit completed practical records duly signed by batch teachers and certified by HOD at the time of examination. (No evaluation of record)

The student is evaluated for **C1**and **C2** respectively as per the following scheme:

Heading	Marks
C1: Minor Experiment	**10**
C2: Major Experiment + Record	**10 + 05=15**
Total	**25**

The student is evaluated for **25 marks** in **C3** as per the following scheme

PART-A: Major Experiment **Marks 14**
PART-B: Minor Experiment **Marks 06**
PART-C: Viva-voce **Marks 05**

PART A: Major Experiment **Marks-14**

Any ONE of the following Colorimetric estimation is set for conduction

1. Glucose by Anthrone method.
2. Ketoacid (Pyruvate) by DNPH method
3. Amino acid by Ninhydrin method.
4. Protein by Biuret method.
5. Protein by Lowry's method.
6. Uric acid by PMA method.
7. Urea by DAMO method.
8. Creatinine by Jaffe's method.
9. Phosphorous by Fiske and Subbarow's method.
10. Iron by Wong's method.

➢ **Assessment of Experimental results:**

- Principle and reaction……..... **4M**
- Tabular Column…….. **3M**
- Graph…….. **3M**
- Result…….....**4M**

% Error	Marks awarded
<10%	4
10-15%	3
Any other value	1

PART-B: Minor Experiment **Marks-06**

Candidate has to be given any **ONE** of the abnormal constituents in the urine sample to analyze qualitatively and report the same.

(Abnormal constituents - glucose, albumin, bile pigments, bile salts and ketone bodies)

- Tests ……... …. **1X 5 = 5M**
- Report…….....**1M**

B.Sc. Biochemistry Semester VI

Practical Examination - Scheme of Valuation (2023-24)

(DSC 8): Molecular Biology and Immunology - Practical 8

Duration: 3-hour **Max. Marks: 25**

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The students will be evaluated on the basis of skill, comprehension and recording the results.

The student has to compulsorily submit the practical record during C1and C2. For C3, Students must submit completed practical records duly signed by batch teachers and certified by HOD at the time of examination. (No evaluation of record)

The student is evaluated for **C1** and **C2** respectively as per the following scheme:

Heading	Marks
C1: Procedure writing **(02)**	**10**
C2: Major Experiment + Record	**10 + 05=15**
Total	**25**

The student is evaluated for **25 marks** in **C3** as per the following scheme

PART-A: Procedure writing **Marks - 08**
PART-B: Major Experiment **Marks - 12**
PART-C: Viva-voce **Marks - 05**

PART A: Minor Experiment **Marks - 08**

Any ONE of the following is to be given for procedure writing

1. Determination of lambda max of proteins and nucleic acid
2. Determination of purity of nucleic acids.
3. Electrophoretic separation of nucleic acids by Agarose gel electrophoresis.
4. Demonstration of pregnancy test
5. Purification of Immunoglobulin G from egg yolk.
6. Demonstration of Western blotting.
7. Demonstration of WIDAL test.

PART-B: Major Experiment **Marks -12**

Any ONE of the following experiments is to be given for conduction

1. Isolation of DNA from banana/endosperm of coconut /any other source.
2. Isolation of RNA from spinach leaves/any other source.
3. Estimation of DNA by DPA method
4. Estimation of RNA by orcinol method.
5. Identification of blood group and Rh factor by Hemeagglutination reaction
6. Determination of Antigen specificity by Single Radial Immunodiffusion assay (SRID)
7. Determination of Antigen specificity by Outcherlony double diffusion method

Assessment of Experimental results:

- For the Experiments No – 1,2,5,6,7
  - Principle and procedure……....**6M**
  - Conduction of Experiment ……. **4M**
  - Report……. **2M**
- For Estimation of DNA/RNA
  - Principle and reaction……...**3 M**
  - Tabular column……... **3M**
  - Graph……**3M**
  - Result……...**3M**

% Error	Marks awarded
<10%	3
10-15%	2
Any other value	1

B.Sc. Biochemistry Semester VI

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively of the semester. The student will be evaluated on the basis of presentation skills and project development. The student Internship may be full-time/part-time (full-time during semester holidays and part-time in the academic session). The student shall avail their discipline specific internship or project in any laboratory, hospitals, companies or Research institutes.

The student has to compulsorily submit the report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

The student is evaluated for 100marks in C1 and C2 as per the following scheme:

Assessment Criteria	Marks
C1: Project Progress Presentation and skills	**50**
C2: Project Development skills and Report	**50**
Total	**100**

B.Sc. (Basic) Semester V/VI Examination

Model question paper: Discipline Specific Course (DSC)

Biochemistry

Duration: 2.30 hours **Max. Marks: 60**

Instructions: Answer any FIVE questions from Part A and any FIVE from Part B.

Part -A **2 x 5 = 10**

1. a.
   b.
   c.
   d.
   e.
   f.
   g.

Part –B **5 x 10= 50**

2. a.
   b
3. a.
   b.
4. a.
   b.
5. a.
   b.
6. a.
   b.
   c.
7. a.
   b.
   c.
8. a.
   b.
   c.

****

NOTE:

1. **Ten marks questions may be divided in to 6+4 or 5+5 for question 2 to 5 and 3+3+4 for 6 to 8**
2. **Question and marks on each unit should be proportional to the number of teaching hours allotted**

B.Sc. Biochemistry Practical Examination

Model question paper

V Semester

DSC (5) - Qualitative analysis of Biomolecules and nutritional aspects

1. Minor experiment/ Procedure writing **08 Marks**
2. Major experiment (Conduction of experiment) **12 Marks**
3. Viva Voce **05 Marks**

DSC (6) - Human Physiology and Enzymology

1. Write the procedure for the experiment……. **05 Marks**
2. Major experiment (Conduction of experiment) **15 Marks**
3. Viva Voce **05 Marks**

VI Semester

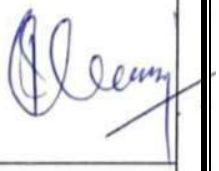
DSC (7) - Metabolism with Clinical Correlations

1. Minor experiment (Conduct the experiments and report the results) **06 Marks**
2. Major experiment (Conduct the experiments and report the results **14 Marks**
3. Viva Voce **05 Marks**

DSC (8) -Molecular Biology and Immunology

1. Write the procedure for the experiment……... **08 Marks**
2. Major experiment (Conduct the experiments and report the results) **12 Marks**
3. Viva Voce **05 Marks**

Board of Studies

Sl No	Name and address	Designation	Signature
1	Ms Ramya V Head, Department of Biochemistry SBRR Mahajana First Grade College, Autonomous Jaylakshmipuram, Mysuru Mobile No: 77601018585 ramyav.fgc@mahajana.edu.in	Chairperson	
2	Dr. Kemparaju K Professor, DoS in Biochemistry, Manasagangothri University of Mysore, Mysuru. Mobile No:9945996543 kemparajuom@gmail.com kemparaj@biochemistry.uni-mysore.ac.in	Member	
3	Mr. Haleshappa R Assistant Professor, Department of Biochemistry, Nrupathunga University Nrupathunga Road, Bengaluru - 560001 Mobile No:9743896433 haleshr222@gmail.com	Member	
4	Dr. Siddesha J M Assistant Professor ,Division of Biochemistry, School of Life Sciences, JSS Academy of Higher Education & Reasearch, SS Nagar, Mysuru-15 Mobile No:7019041500 siddeshajm@gmail.com	Member	
5	Dr. Puneeth Kumar Managing Director, Azymus Lifescience Pvt. Ltd. Kellamballi Industrial Area, KIADB, Chamrajnagara. Mobile No:8971155575 azymus.pharma@gmail.com	Member	
6	Ms. Pallavi Assistant Professor, Department of Biochemistry MMK & SDM College, Mahila Mahavidyalaya, Mysuru Mobile No:9538582629 pallavimr1990@gmail.com	Member	Absent
7	Smt. Radhika P Assistant Professor, Department of Biochemistry SBRR Mahajana First Grade College, Autonomous Jaylakshmipuram, Mysuru Mobile No:9986585574 radhikap.fgc@mahajana.edu.in	Member	

Mahajana Education Society (R.)
Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE
(Autonomous)

Jayalakshmipuram, Mysuru – 570 012
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College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF BIOTECHNOLOGY

UG ☑

PG ☐

NEP Syllabi for V and VI Semester B.Sc.

Biotechnology

2023-24

DEPARTMENT OF BIOTECHNOLOGY

Motto

Science for Future

Vision

To pave way for an innovative future and welfare of society by enhancing technical skills in solving the real world problems.

Mission

To understand Biotechnology at Molecular level
To create skilled researchers to meet practical challenges.
To provide quality education and attain new heights in achieving goals

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions -Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO5: Use of Modern Techniques/Tools – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO6: Impact of Science on Society – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning – Engage in the art of self-directed learning.

List of BoS Members

Sl No	Category	Name and Designation	Address for Communication	e-Mail & Mobile No.
1.	Chairperson	Priyanka Shenoy N Assistant professor and Head	Department of Biotechnology, SBRR Mahajana First Grade College,Mysuru -12	Priyankapravanvivek83741@gmail.com Ph no-9663218437
2.	Nominee by the Vice Chancellor	Dr. Geetha N Professor	S in Biotechnology, Manasagangothri University of Mysore, Mysuru.	Geethabiotech.uom@gmail.com Ph no- 9986203018
3.	Two Experts from Other University	Dr. Sumana K. Associate Professor	Department of Microbiology, Faculty of life Sciences, JSS – Academy of Higher Education and Research, Mysuru – 570004	mnsumana@jssuni.edu.in Ph No 91740390666
4.		Dr. Chandrashekar Assistant Professor	Department of studies in Biotechnology Davangere University, Davengere	chandru.s@davangereuniversity.ac.in Ph No 9164176224
5.	One Person from Industry	Dr. Irfanulla Sharieff Chief scientific officer	Triphase pharmaceuticals Pvt Ltd, KSSIDC Industrial estate, Hebbal, Mysore-16	Sharieffirfan17@gmail.com Ph No 9845881086
6.	Alumnus	Ms. Brunda A Tutor Department of Biochemistry	Kanachur Institute of Medical Sciences Mangalore	brundaa@jssuni.edu.in Ph No 7259722515

Course Structure (NEP 2020)

III Year B.Sc. Biotechnology

Discipline Specific Courses (DSC), Employability Skills (EMP), Internship Programme (INT)

L: Lecture; **T:** Tutorial; **P:** Practical

Course Code, Type and Title		Hours /week		Number of Credits (L:T:P)	Max marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P		C1	C2	C3		
V SEMESTER									
232559	DSC (5) Genetic Engineering	4	0	4 : 0 : 2 (6 credits)	20	20	60	2½ Hours	100
	DSC (5) LAB Genetic Engineering	0	4		10	15	25	3 Hours	50
232560	DSC (6) Plant and Animal Biotechnology	4	0	4 : 0 : 2 (6 credits)	20	20	60	2½ Hours	100
	DSC (6) LAB Plant and Animal Biotechnology	0	4		10	15	25	3 Hours	50
23EMPBIT 01	Sec(5) Biotechnology skills and analytical techniques	2	0	3:0:0 (3 credits)	10	10	30	1½ Hours	100
	Quality control methods in Biology	0	1		10	15	25	3 Hours	
VI SEMESTER									
232659	DSC (7) Immunology	4	0	4 : 0 : 2 (6 credits)	20	20	60	2½ Hours	100
	DSC (7) LAB Immunology	0	4		10	15	25	3 Hours	50
232660	DSC (8) Bioprocess and Environmental Biotechnology	4	0	4 : 0 : 2 (6 credits)	20	20	60	2½ Hours	100
	DSC (8) LAB Bioprocess and Environmental Biotechnology	0	4		10	15	25	3 Hours	50
INT	Internship 23INTBIT01	2	0	2 : 0 : 0	50	50	-	-	100

Discipline Specific Courses (DSC)
III Year B.Sc. Biotechnology

DSC (5) Syllabus for B.Sc. Biotechnology (Basic and Honors)

Semester V

Course Code: 232559	**Course Title**: Genetic Engineering (Theory) Genetic Engineering Lab (Practical)
Course Credits (L:T:P) : 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical
Total Contact Hours: 60 Hours(Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2½ Hours(Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Interpret and apply the basic concepts of nucleic acid isolation, quantification and gene expression analysis. Acquire the information about the process of cloning and different types of cloning vectors.

CO 2: Analyze the basic principles of genome editing and manipulation techniques of both prokaryotic and eukaryotic organisms. Get acquainted with the basic techniques of Genetic engineering.

CO 3: Describes the basic principles and applications of genetic engineering in various field.

CO 4: Interpret the concepts of industrial scale up and advances in genetic engineering. Debate on ethical implications associated with genetic engineering

Course Content	
Genetic Engineering - Content of Theory	**60Hrs**
Unit I- Fundamentals of Genetic Engineering	**15**
Definition, scope, and historical overview of genetic engineering. **DNA Structure and Manipulation** - Techniques for DNA isolation and purification. Methods for quantification and characterization of DNA samples. **RNA Analysis and Gene Expression**- Methods for RNA isolation and purification. Analysis of gene expression. **Recombinant DNA technology** – Introduction to molecular cloning. Overview of cloning vectors. Plasmids, phage, cosmid, BAC, and YAC. Features and applications of cloning vectors in genetic engineering. Enzymes used in recombinant DNA technology: Restriction endonucleases, Polymerases, Ligase, kinases, and phosphatases. Techniques for molecular cloning of DNA or RNA fragments in bacterial and eukaryotic systems.	
Unit II- Practices in Genetic Engineering	**15**
Recombinant Protein Expression and Purification, affinity tags. Techniques for expressing recombinant proteins using bacterial, animal,and plant expression systems. Strategies for protein purification and characterization. Hybridization techniques, Southern, Northern, Western, FISH, Polymerase Chain Reaction (PCR) and its types, molecular probes, DNA sequencing- Sanger's, Next Generation Sequencing **Gene Manipulation Techniques** - Methods of gene delivery. Physical (electroporation, micro-injection, gene gun) chemical (liposome mediated, Calcium phosphate) and biological methods (Transformation, transfection) Gene knockout techniques in bacterial and eukaryotic organisms. **Genome Editing** - Introduction to genome editing techniques- Principles and applications of genome editing techniques. CRISPR-Cas9, site-directed mutagenesis, and other genome editing methods.	
Unit III- Applications of Genetic Engineering	**15**
Introduction and diverse applications of genetic engineering. Gene therapy and its potential in treating genetic disorders. Strategies for gene delivery in therapeutic applications. Diagnostic Applications. DNA fingerprinting and its applications in forensics. Molecular diagnostic techniques and their role in disease diagnosis. Use of genetic engineering in the development of therapeutics and vaccines. Production of biopharmaceuticals using recombinant DNA technology.	
Unit –IV- Advances in Genetic Engineering and Ethics	**15**

Industrial Applications. Industrial applications of genetic engineering, such as enzyme production, biofuel production, and bioremediation. Scale-up techniques and process optimization in industrial settings. Introduction to synthetic biology and its integration with genetic engineering. Design and construction of artificial biological systems. **Ethical and Regulatory Considerations** - Discussion of ethical implications associated with genetic engineering. Introduction to regulatory guidelines and safety considerations for genetic engineering research and applications	

References:

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2. Gene Cloning and DNA Analysis: An Introduction (2019) 7th ed., Brown, TA, Wiley Blackwell, ISBN: 978-1119072560.
3. Genome 4 (2017) 4th ed., Brown, TA, Garland Science, ISBN: 978-0815345084.
4. Introduction to Genomics (2015) 2nd ed., Lesk, AM, Oxford University Press India, ISBN: 978-0198745891.
5. Genomics and Personalized Medicine: What Everyone Needs to Know (2016) 1st ed., Snyder, M, OUP-USA, ISBN: 978-0190234768.
6. Molecular Biology of the Gene (2014) 7th ed., Watson, JD, Baker, TA, Bell, SP, Gann, A, Levine, M, and Losick, R, Pearson, ISBN: 978-0321762436.
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9. Introduction to Genomics and Proteomics (2015) 2nd ed., Burrell, MM, Wiley, ISBN: 978- 0470850075.
10. Genomics: The Science and Technology Behind the Human Genome Project (2019) 2nd ed., Gibson, G, and Muse, SV, Oxford University Press, ISBN: 970198786207.
11. Genomics and Evolution of Microbial Eukaryotes (2019) 1st ed., Katz, LA, and Bhattacharya, D, Oxford University Press, ISBN: 978-0198830202.
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15. Molecular Genetics and Genomics (2020) 1st ed., Krebs, JE, and Goldstein, ES, Jones & Bartlett Learning, ISBN: 978-1284154544.
16. Bioinformatics and Functional Genomics (2015) 3rd ed., Pevsner, J, Wiley-Blackwell, ISBN: 978-1118581780.
17. Genomic Approaches for Cross-Species Extrapolation in Toxicology (2019) 1st ed., Wichard, J, and Maertens, A, CRC Press, ISBN: 978-0815348023.
18. Introduction to Genetic Analysis (2020) 12th ed., Griffiths, AJF, Wessler, SR, Carroll, SB, and Doebley, J, W.H. Freeman, ISBN: 978-1319149609.
19. Genetic Engineering: Principles and Methods (2019) 3rd ed., Fowler, MR, CABI, ISBN: 978- 1789240605

Weblinks:

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2. https://www.ncbi.nlm.nih.gov/books/NBK424529/
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5. https://www.cambridge.org/core/books/an-introduction-to-genetic-engineering/A3B274BAC608CE61F02B78BFC24836C9
6. https://onlinelibrary.wiley.com/doi/book/10.1002/9783527620838

DSC (5): Practical

Genetic Engineering

(4Hrs/week) 2 Credits

1. **Introduction to Laboratory Techniques** - Safety guidelines and laboratory protocols Aseptic techniques and proper handling of materials. Basic equipment and instrument operation Preparation of reagents and media
2. **Nucleic Acid Extraction and Quantification** (DNA/RNA) DNA extraction from different sources (e.g., bacteria/plant/ animal). Quality assessment and quantification of nucleic acids (DNA/RNA) (spectrophotometry, gel electrophoresis).
3. **Polymerase Chain Reaction (PCR)** Primer design and optimization PCR setup and cycling conditions Agarose gel electrophoresis for PCR product analysis
4. **Cloning and Plasmid Manipulation** Isolation of Plasmid Restriction enzyme digestion Ligation reactions Transformation of bacterial cells with recombinant plasmids Colony selection and screening for successful cloning
5. **Gel Electrophoresis and DNA Analysis** Agarose gel electrophoresis for DNA fragment separation and analysis DNA size determination using molecular weight markers DNA band visualization techniques (e.g., Ethidium bromide staining, DNA intercalating dyes)

Course Articulation Matrix – 232559

CO/PO	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO 9	PO10	PO11	PO12
CO 1	2	1	1	2	2	2	2	2	1	3	2	2
CO 2	2	1	2	2	2	2	2	1	1	3	1	2
CO 3	2	1	2	3	2	2	2	2	1	3	2	2
CO 4	2	-	2	2	-	2	2	3	-	2	1	2
Weighted Average	2	1	1.75	2.25	2	2	2	2	1	2.75	1.5	2

DSC (6) Syllabus for B.Sc. Biotechnology (Basic and Honors)

Course Code: 232560	**Course Title:** Plant and Animal Biotechnology (Theory) Plant and Animal Biotechnology (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04(Practical)
Total Contact Hours: 60 Hours(Theory) 60 Hours(Practical)	**Formative Assessment Marks:** 40 (Theory) 25(Practical)
Exam Duration: 2½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Exposure to the plant tissue culture skills and applications in Plant Biotechnology and research

CO 2: Acquire information about the concepts of cloning and transgenesis of both plants and animals with respect to the advancement in medical, agricultural and pharmaceutical industry.

CO 3: Develop the ability about animal cell potency, mass production of cell lines and basic characterization of mammalian cell culture.

CO 4: Elucidate and specify different types of gene transfer techniques, gene editing and basic concept about ethical issues.

Course Content:

Unit I– Plant Tissue culture methods	**60 Hrs**
Introduction, principle, history, definition, hypothesis of plant tissue culture and cellular totipotency. media and laboratory organization, types of culture; callus culture, seed culture, embryo culture, meristem culture, bud culture, their limitations and applications. Concept of morphogenesis, differentiation, direct, indirect organogenesis, somatic embryogenesis, synthetic seeds. In vitro propagation and micropropagation, Secondary metabolites, In vitro secondary metabolite production, Suspension cultures, cell cultures, growth vs secondary metabolite production, bioreactors and scaling up of secondary metabolite production, limitations, and applications.	**15**

Unit –II Transgenic Plants and biosafety	
Overview of transgenic plants and their significance in agriculture. - Techniques for introducing foreign genes into plants: Agrobacterium-mediated transformation, biolistics, and other methods. Selection and screening of transformed plants. Applications of Transgenic Plants - Improved crop traits through genetic engineering: pest resistance, herbicide tolerance, disease resistance, and abiotic stress tolerance. Biosafety assessment of transgenic plants: potential risks and benefits. International regulatory frameworks for releasing and commercializing genetically modified organisms (GMOs). Ethical and socio-economic impacts of transgenic crops. Intellectual property rights and access to transgenic technologies.	**15**
Unit –III Animal Cell culture methods	
History and laboratory organization, types of Media (Natural media, artificial media, serum free media, chemically defined media and protein free media). Cell types and culture characters, Concept of Pluripotency, Multipotency, Differentiation, Trans differentiation Reprogramming, Biology and characterization of cultured cells- cell adhesion, proliferation, differentiation, morphology of cells, and identification. The basic technique of mammalian cell culture in vitro, Measuring parameters of growth in cultured cells (Lag phase, log phase, and plateau phase) cell viability, and cytotoxicity. Large-scale culture of cell lines- monolayer, suspension, and immobilized cultures. Organ and histotypic culture: Technique, advantages, limitations and applications. Stem cells: types (embryonic, adult, induced pluripotent), isolation, identification, expansion, differentiation and uses, stem cell engineering and ethical issues.	**15**
Unit- IV Gene transfer in animals and applications	
Gene constructs promoter/ enhancer sequences for transgene expression in animals. Selectable markers for animal cells- thymidine kinase. Transfection of animal cells- calcium phosphate coprecipitation, electroporation, lipofection, peptides, direct DNA transfer, viral vectors, Retrovirus, microinjection. Transgene identification methods. Transgenic and genome-edited animals. Ethical issues in transgenesis. Recent advances and applications in the field. Manipulation of animal reproduction and characterization of animal genes, Embryo transfer in cattle and applications. Somatic cell cloning - cloning of Dolly. Ethical issues. Production of recombinant vaccines.	**15**

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Weblinks:

1. https://www.intechopen.com/chapters/40180
2. https://www.britannica.com/science/tissue-culture
3. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7088179/
4. https://www.isaaa.org/resources/publications/pocketk/14/default.asp
5. https://www.ncbi.nlm.nih.gov/books/NBK207572/
6. https://www.nifa.usda.gov/grants/programs/biotechnology-programs/animal-biotechnology
7. https://www.tandfonline.com/journals/labt20

DSC (6): Plant and Animal Biotechnology

(4Hrs/week) 2 Credits

1. Laboratory organization of basic and commercial plant tissue culture

2. Media preparation (MS, B5), solid media preparation, and Liquid media preparation

3. Explant preparation – Leaf, bud, rhizome, and meristem

4. Synthetic seed production

5. Callus culture- Initiation and establishment of different types of callus cultures

6. Micropropagation with a suitable example – Stage 0. 1, 2, 3, and 4

7. Staining, cell viability, and cell count of cell cultures

8. Preparation of cell culture media: Preparation of basic cell culture media, such as Dulbecco's Modified Eagle Medium (DMEM), supplemented with fetal bovine serum (FBS), antibiotics, and other required additives.

9. Aseptic techniques and sterile handling: Practicing aseptic techniques, including properly handling tools and equipment, working in a laminar flow hood, and maintaining sterility throughout the cell culture process.

10. Sterilization: Practice filter sterilization for sensitive media ingredients.

11. Cell counting and viability assessment: Count cells using a hemocytometer or automated cell counter, and perform viability assays (e.g., trypan blue exclusion) to determine the percentage of viable cells.

12. Cell staining and microscopy: Staining the cultured cells using dyes such as hematoxylin and eosin (H&E), and observe them under a light microscope to study cell morphology and structure.

13. Contamination identification and troubleshooting: Learn to identify and troubleshoot common issues in cell culture, such as contamination by bacteria, fungi, or mycoplasma, and implement appropriate corrective measures.

14. Experimental design and data analysis: Students can design and execute simple experiments, record and analyze data, and interpret the results based on their observations and measurements.

Course Articulation Matrix – 232560

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	1	2	1	2	2	1	3	2	2
CO 2	2	2	2	1	3	2	3	1	2	3	1	2
CO 3	2	1	2	2	2	1	2	2	1	1	2	3
CO 4	2	2	2	2	3	1	1	3	2	2	2	2
Weighted Average	2.25	1.75	1.75	1.5	2.5	1.25	2	2	1.5	2.25	1.75	2.25

Biotechnology Skills and Analytical Techniques

Semester V

Course Code: 23EMPBIT01	**Course Title:** Biotechnology and Analytical techniques (Theory) Quality control methods in biology (Practical)
Course Credits (L:T:P): 03 (2:0:1)	**Hours of Teaching/Week:** 02 (Theory) 02(Practical)
Total Contact Hours: 30 Hours(Theory) 30 Hours(Practical)	**Formative Assessment Marks:** 20 (Theory) 25(Practical)
Exam Duration: 1½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 30 (Theory) 25(Practical)

Course Outcomes (COs):

- CO 1: To introduce the concept of executive industrial skills and Digital skills
- CO 2: Familiarize the working principle of several bioanalytical techniques like microscopy, centrifugation, spectroscopy and electrophoretic and other technique.

Course Content	**30Hrs**
Unit-I Insights into the biotechnology industry and basic professional skills	
Biotechnology Industry in Indian and Global Context- Organization in the context of large/medium/small enterprises, their structure, and benefits. **Industry-oriented professional skills:** Planning and organizing skills, decision-making, problem solving skills, analytical thinking, critical thinking, team management, and risk assessment. Interpersonal skills: Writing skills, reading skills, oral communication, conflict resolution techniques, interpretation of research data, and troubleshooting in the workplace. **Digital skills:** Basic computer skills (MS Office, excel, power point, internet) for the workplace. Professional E-mail drafting skills and PowerPoint presentation skills. Overview of good manufacturing practices (GMP), Good Documentation practices (GDP), and good laboratory practices (GLP).	**15**
Unit- II Basic laboratory skills and Analytical Techniques	
Analytical skills in the laboratory: Preparations of solutions, molarity, molality, normality, mass percent % (w/w), percent by volume (%v/v), parts per million (ppm), parts per billion (ppb), dilution of concentrated solutions. Standard	

solutions, stock solution, and solution of acids. Reagent bottle label reading and precautions.	
Analytical techniques: Basic principle, operation, application, maintenance, calibration, validation, and troubleshooting of instruments- Microscope-Simple, compound, TEM, SEM, fluorescence. Centrifuge and different types, Hot air oven, pH meter, different types of pH electrodes Autoclave, Incubator, BOD, COD, cell counter, Laminar airflow. Spectroscopy Colorimeter, UV-Visible spectroscopy. Electrophoresis- Agarose Gel electrophoresis, SDS-PAGE, PCR, Conductivity meter, and Potentiometer. Biosafety cabinets.	**15**

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Web links:

1. https://www.pharmatutor.org/articles/bioanalytical-techniques-overview
2. https://www.intechopen.com/chapters/67668
3. https://bookstore.teri.res.in/books/9788179935293

SEC: Practical

Quality control methods in Biology

2hrs/Week

Course Content	30Hrs
Unit-I Methods and practices of cleaning and management of lab	
Learning and Practice of Integrated clean-in-place (CIP) and sterilize-in-place (SIP) as per industry standards, material requirements for cleaning specific areas, equipment, ventilation area, personal protective requirements Calibration of and use of micropipette.	
Unit- II	
Preparation of Standard Operating Procedure (SOP) for various equipment in the QC Lab, Best practices of using and storing chemicals: Knowledge and practice in handling chemicals, labeling, and stock maintenance. SOP and material handling. Procedures to maintain chemicals, labeling, storage, and disposal. **Handling and calibration of lab equipment**- weighing balance, Autoclave, Hot air Oven, Incubator, Centrifuge, Water bath, Colony Counter, and stability chamber, Preparation of Normality, Molarity, and buffer solutions.	
Unit- III	
Preparation of media: Maintenance and storage of purified water for media (plant tissue culture media, microbiological med, and animal cell culture media) preparation. Preparation and storage of concentrated stock solutions. Documentation and disposal of expired stocks. Collection of indents of media requirement, preparation, and storage. Media coding, documentation, and purpose of usage. Demonstration, handling, and troubleshooting of High-Performance Liquid Chromatography and Gas chromatography. Demonstration of Polymerase Chain Reaction (PCR), Hands-on training on colorimeter and spectrophotometer, Industry visit, or analytical laboratory visit.	

Course Articulation Matrix -23EMPBIT01

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	1	2	3	-	2	1	2	3	2	3
CO 2	3	2	2	2	3	1	2	-	2	3	2	2
Weighted Average	2.5	1.5	1.5	2	3	1	2	1	2	3	2	2.5

DSC (7) Syllabus for B.Sc. Biotechnology (Basic and Honors)

VI SEMSTER

Course Code: 232659	**Course Title:** Immunology (Theory) Immunology (Practical)
Course Credits (L:T:P) :06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks**: 40 (Theory) 25 (Practical)
Exam Duration: 2½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Overview of various aspects about cells and organs of immune system.
CO 2: Strengthen the concept of antigen-antibody interaction, MHC, Hypersensitivity and complementation pathways**.**
CO 3: Technical skills with respect to immunology and vaccine development
CO 4: Application and interpretation of immunological techniques for treating autoimmune diseases, immuno-deficiencies and cancer immunotherapy

Course content	60 Hours
Unit–I Cells and Organs of the Immune System	
Introduction to the Immune System: History of Immunology, Types of Immunity: first and second line of defense, innate and acquired/adaptive immunity, specificity, diversity. Cells of the immune system: Antigen-presenting cells (APCs), Role of B and T-lymphocytes in Humoral immunity and cell-mediated immunity, primary and secondary immune response, Immunization, memory. Organs of the Immune system: Thymus, bone marrow, spleen, Lymph Node, peripheral lymphoid organs	**15**
Unit -II Molecules of the Immune System	
Antigens and haptens: Properties (foreignness, molecular size, heterogeneity). Adjuvants. Antigenicity and Immunogenicity. Affinity and Avidity. B and T cell epitopes, superantigens Immunoglobulins: Classification, structure, and function. Antibody diversity, Monoclonal and polyclonal antibodies. Major histocompatibility complexes: Classification, structure, and function. Antigen processing pathways – Cytosolic and Endocytic, Complement Pathways, Cytokines: Classification and function, Hypersensitivity: Reactions – Types I, II, and III. Delayed Type Hypersensitive Response.	**15**
Unit -III Immuno-techniques and vaccines	
Structure and properties of antigens- iso- and allo-antigens, antigen specificity, Cross-reactivity, Precipitation, Immunodiffusion reactions Radial immunodiffusion, Ouchterlony double diffusion, Immuno electrophoresis. Agglutination: Agglutination reactions. ELISA, RIA Immunocytochemistry, Fluorescent Techniques.	**15**
Unit – IV	
Transplantation immunology: Phases in graft rejection and immuno-suppressors. Autoimmune Disorders: Systemic and Organ-specific Autoimmune disorders with examples Immunodeficiencies: Primary and secondary immunodeficiencies; acquired immunodeficiency syndrome (PIDD-SCID, X-Linked agammaglobulinemia). Cancer and the immune system – immune surveillance, immunological escape, cancer antigens, cancer immunotherapy Vaccines: Conventional (Killed vaccines, live attenuated vaccines toxoids), peptide vaccines, subunit, DNA vaccines. Toxoids, antisera, edible vaccines, plantibodies, and Cancer vaccines (HPV)	**15**

References:

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DSC (7): Practical Immunology

(4Hrs/week) 2 Credits

1. Hemagglutination of ABO Blood groups
2. Determination of Rh factor
3. Whole Count of WBC using Hemocytometer
4. Cells of the Immune System
5. Radial immunodiffusion
6. Ouchterlony double diffusion
7. ELISA – Demonstrate
8. Serum Immuno-electrophoresis
9. Western Blotting

Course Articulation Matrix – 232659

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	1	2	3	2	1	1	1	3	1	3
CO 2	2	-	2	2	2	2	1	1	2	2	1	2
CO 3	2	2	1	2	3	2	2	1	1	3	2	1
CO 4	2	1	3	3	2	2	-	2	1	3	1	3
Weighted Average	2	1.3	1.75	2.25	2.5	2	1.3	1.25	1.25	2.75	1.25	2.25

DSC (8) Syllabus for B.Sc. Biotechnology (Basic and Honors)

Course Code: 232660	**Course Title:** Bioprocess and Environmental Biotechnology (Theory) Bioprocess and Environmental Biotechnology (Practical)
Course Credits (L:T:P) : 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks**: 40 (Theory) 25 (Practical)
Exam Duration: 2½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: The skills of exploitation of microorganisms for bioprocess technology, principle of upstream processing and concept of fermentation techniques.

CO2: The basic concept introduces significance of bioreactors, certain analytical techniques in downstream processing and its biological applications.

CO3: The concept introduces evaluations of environmental biotechnology in regards with major issues in environmental pollution, detection and abandonment.

CO4: Illustration and importance of bioremediation and various biological approach for waste water management.

Course Content	**60 Hours**
UNIT- I – Introduction to bioprocess technology	
Basic principle components of fermentation technology. Strain improvement of industrially important microorganisms. Types of microbial culture and its growth kinetics– Batch, Fed-batch, and Continuous culture. Principles of upstream processing – Media preparation, Inocula development, and sterilization.	**15**

	Hours
UNIT- II-Bioreactors and downstream processing	
Bioreactors- Significance of Impeller, Baffles, Sparger; Specialized bioreactors- design and their functions: airlift bioreactor, tubular bioreactors, membrane bioreactors, tower bioreactors, fluidized bed reactor, packed bed reactors Downstream processing- cell disruption, precipitation methods, solid-liquid separation, liquid-liquid extraction, filtration, centrifugation, chromatography, drying devices (Lyophilization and spray dry technology), crystallization, biosensors-construction and applications, Microbial production of ethanol, amylase and Single Cell Proteins.	**15**
Unit III- Fundamentals of Environmental Biotechnology	
Introduction to Environmental Biotechnology- Principles of Environmental Science. Role of Biotechnology in Environmental Conservation. Microbial Processes in Environmental Biotechnology. Pollution and Biotechnology – Major issues in environmental pollution and the role of biotechnology in addressing them. Biotechnological Methods of Pollution Detection-General bioassay methods for pollution detection. Cell biological methods for assessing pollution levels. Use of biosensors in pollution monitoring. Biotechnological Methods in Pollution Abatement-Reduction of CO2 emission using biotechnological approaches. Addressing eutrophication through biotechnological interventions. Application of cell immobilization techniques in pollution abatement.	**15**
Unit IV- Bioremediation and Waste Management	
Importance of bioremediation in environmental cleanup. Types of contaminants suitable for bioremediation. Microorganisms used in bioremediation. In-situ Bioremediation Methods. – Bioaugmentation. Biostimulation. Bioventing. Phytoremediation. Ex-situ Bioremediation Methods – Composting, Land farming, Biopile and bioslurry systems. Xenobiotics. Bio metallurgy and biomining. Waste water Management. Waste water Characterization and Composition. Biological Processes in Waste water Treatment. Activated Sludge Process and Biological Nutrient Removal, Anaerobic Digestion and Biogas Production. Solid Waste Management.	**15**

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2. https://sist.sathyabama.ac.in/sist_coursematerial/uploads/SBTA1304.pdf
3. https://www.studocu.com/row/document/harare-institute-of-technology/bioprocess-engineering/environmental-biotech-notes/42751292
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DSC (8): Practical

Bioprocess and Environmental Biotechnology

(4Hrs/week) 2 credits

1. Bacterial growth curve.
2. Calculation of the thermal death point (TDP) of a microbial sample.
3. Study of fermenter- Demonstration.
4. Production of wine.
5. Estimation of the percentage of alcohol, total acidity & volatile acidity in wine.
6. Production and analysis of ethanol.
7. Production and analysis of amylase.
8. Production and analysis of lactic acid.
9. Isolation of industrially important microorganisms from natural resources.
10. Standard analysis of Water (Biological oxygen demand, toxic chemicals and estimation of total dissolved solids, microbial examination of given water sample).

Course Articulation Matrix – 232660

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	1	3	2	2	3	1	1	2	1	3
CO 2	2	2	1	3	2	1	3	1	1	2	1	2
CO 3	2	2	2	2	2	2	3	2	1	2	1	2
CO 4	1	3	1	2	3	2	3	1	1	2	2	2
Weighted Average	1.75	2	1.25	2.5	2.25	1.75	3	1.25	1	2	1.25	2.25

B.Sc. Biotechnology 6th Semester

Internship Program

Course Code: 23INTBIT01	**Course Title :**Internship
Course Credits: 02	**Hours of Teaching/Week: 4-5 weeks**
Total Contact Hours: 90 Hours Internship	**Formative Assessment Marks** 100 Marks (C1=50+C2=50)

Course Outcomes (COs):

CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.

CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

Course Articulation Matrix – 23INTBIT01

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	-	-	1	3	3	2	2
CO 2	3	3	3	3	3	2	1	1	3	3	2	2
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**1**	**1**	**3**	**3**	**2**	**2**

Continuous Formative Evaluation/Internal Assessment (DSC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days ofsemester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examinationshall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed bythe concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	**C2 Marks**	**Total Marks**
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/CaseStudy/Field Work/Project Work/Quiz etc.		20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the ratio is 25 (10 + 15):25).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., the students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

  Part-A (C1): 10 marks

  Part-B (C2): 10 marks + Record: 05 marks = 15 marks
- The student is evaluated for 25 marks in C3 as per the following scheme:

Part A	Major question	08
Part B	Minor question	06
Identify and comment (Any four photographs: Decided by the External Examiner)		06
Viva Voce		05
TOTAL		**25**

Continuous Formative Evaluation/Internal Assessment (SEC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 20:30 for IA and Semester End Theory Examinations respectively and 25:25 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	50 Marks	50 Marks
Continuous Assessment – 1 (C1)	10 Marks	10 Marks
Continuous Assessment – 2 (C2)	10Marks	15 Marks
Semester End Examination (C3)	30 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50%of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuinereasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness ofthe case and decide to conduct special test to such candidate on the date fixedby the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerneddepartment at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	10	-	10
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	10	10
Total	10	10	20

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance(the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment marks.

SEC: Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

  Part-A (C1): 10 marks

  Part-B (C2): 10 marks + Record: 05 marks = 15 marks

- The student is evaluated for 25 marks in C3 as per the following scheme:

Part A	Major question	08
Part B	Minor question	06
Identify and comment (Any four photographs: Decided by the External Examiner)		06
Viva Voce		05
TOTAL		**25**

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively for the semester. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

• **The student is evaluated for 50 marks in C1 and C2 as per the following scheme:**

Project progress presentation (**C1**): 50 Marks
Project Development and Report (**C2**): 50 Marks

Assessment Criteria	Marks
Project Presentation Skills	50
Project Development Skills and Report	50
Total	**100**

DSC V AND VI SEM -THEORY QUESTION PAPER PATTERN

BSc BIOTECHNOLOGY

DURATION: 2½ Hours **MAXIMUM: 60 Marks**

Instructions: All questions are compulsory.
Draw neat labeled diagrams wherever necessary.

I. Answer any 6 questions **6X2=12**

a)
b)
c)
d)
e)
f)
g)

II. Answer any one question

(UNIT-1)

1X12=12

1.
2.

III. Answer any one question

(UNIT-II) **1X12=12**

3.
4.

IV. Answer any one question **1X12=12**

(UNIT-III)

5.
6.

V.Answer any one question

7. **(UNIT-IV)** **1X12=12**
8.

V AND VI SEM PATTERN OF PRACTICAL EXAMINATION

Practical examination – B.Sc BIOTECHNOLOGY- C3

Duration: 3 hours	**Max. Marks: 25**
Q1. Major question	08 Marks
Q2. Minor question	06 Marks
Q3. Identify and Comment	2X3= 06 Marks
Q4. Viva-voce	05 Marks

SEC (5)- Theory Question paper pattern

BSc BIOTECHNOLOGY

Duration: 1½ hours **Maximum: 30 Marks**

Instructions:All questions are compulsory

Draw the neat labelled diagrams where ever necessary

I. Define any FIVE of the following 5x2=10 M

1. (a) (b)

(c) (d)

(e) (f)

(g)

II. Explain any TWO of the following 2x10=20M

2. 6.

3. 7.

4. 8.

5.

PATTERN OF PRACTICAL EXAMINATION

SEC: Practical examination – B.Sc BIOTECHNOLOGY- C3

Duration: 3 hours	**Max. Marks: 25**
Q1. Major question	08 Marks
Q2**.** Minor question	06 Marks
Q3. Identify and Comment	2X3= 06 Marks
Q4. Viva-voce	05 Marks

B.Sc. Biotechnology SEMESTER V

Practical Examination – Scheme of Valuation (2023-24)
DSC -5: Genetic Engineering

Duration: 3 hours **Max. Marks: 25**

Q1. **Extraction of DNA from plant source** **08M**

(Conducting experiment- 4M, Procedure -2M, Result- 1M, Report -1M)

Q 2. **Quantification of DNA by Spectrophotometry** **06M**

(Conducting experiment- 02M, Result and Calculation- 4M)

Q 3. **Comment on A, B and C** **(2 x 3) = 6M**

(Identification - 1M, Comment -1M)

Q.4 **Viva-voce** **05M**

Practical DSC-6: Plant and Animal Biotechnology

Duration: 3 hours **Max. Marks: 25**

Q 1. **Cell counting and Viability assessment using Haemocytometer by Tryphan blue exclusion method** **8M**

(Conducting experiment-4M, Procedure -2M, Report and calculation 2M)

Q 2. **Preparation of Explants**

(Conducting experiment-4M, Procedure -2M) **6M**

OR

Synthetic seed preparation

(Conducting experiment-4M, Procedure -2M)

Q 3. **Comment on A, B and C**

(Identification - 1M, Comment -1M) **(2 x 3) = 06M**

Q 4. **Viva voce** **05 M**

B.Sc. Biotechnology SEMESTER VI

Practical Examination – Scheme of Valuation (2023-24)
DSC -7: Immunology

Duration: 3 hours **Max.Marks: 25**

Q1.Determination of ABO blood groups and Rh factor **8M**

(Conductingexperiment-4M,Procedure-2M,Report2M)

Q2.Ouchterlony double diffusion/ Radial immunodiffusion **6M**

(Conducting experiment-4M, Procedure -2M)

Q3. Comment on A, B and C **(2 x 3) = 06M**

(Identification - 1M, Comment -1M)

Q4. Viva voce **05M**

DSC 8: Bioprocess and Environmental Biotechnology

Duration: 3 hours **Max. Marks: 25**

Q1.Estimation of the Biochemical oxygen demand/ toxic chemicals **8M**

(Conductingexperiment-4M,Procedure-2M,Report2M)

Q2. Identification of biological indicators of water pollution

(Identification-1 , Explanation of any two organisms with diagram -3M, Procedure -2M)

OR

Estimation of alcohol by specific gravity **6M**

(Conducting experiment-3M, Procedure -2M, Report 1M)

Q3. Comment on A, B and C

(Identification - 1M, Comment -1M) **(2 x 3) = 06M**

Q4. Viva voce **5M**

B.Sc. Biotechnology- Semester V

Practical Examination – Scheme of Valuation (2023-24)
SEC -5: Quality control methods in Biology

Duration: 3 hours **Max.Marks: 25**

Q1. Demonstration of Polymerase Chain Reaction **8M**

OR

Handling and Calibration of Autoclave /Hot air Oven/Incubator/ Centrifuge/Water bath/Colony Counter and stability chamber

(Conducting experiment-4M, Procedure-2M, Report2M)

Q2. Preparation of Normality, Molarity and Buffer solutions **6M**

(Conducting experiment-4M, Procedure -2M)

Q3. Comment on A, B and C **(2 x 3) = 06 M**
(Identification - 1M, Comment -1M)

Q4. Viva voce **05 M**

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NEP Syllabi for I and II Semester BBA 2021-22

DEPARTMENT OF BUSINESS ADMINISTRATION

Motto

TO CREATE BUSINESS LEADERS WITH
SOCIAL RESPONSIBILITY

Vision

To create and develop entrepreneurs who exhibit professionalism, accountability, transparency, human values and uphold Indian heritage in high esteem.

Mission

- Giving practical orientation to entrepreneurial ability.
- Giving professional exposure and building up leadership ability by organizing seminars, workshops, management fests and to make students participate in other similar activities.
- Make students to understand the importance of social responsibility in the corporate governance.
- Giving exposure on Indian ethos to future business leaders.

Programme outcomes for Business Administration

POs	Programme Outcomes (POs)
PO1	**Domain knowledge: Acquire** knowledge of management theories and practices with special focus on professional accounting and finance.
PO2	**Problem analysis:** Identify, formulate and analyze complex business problems in a structured approach to focus upon real issues.
PO3	**Design/development of solutions:** Developing solutions by using critical thinking and analytical reasoning with appropriate qualitative, quantitative techniques and software applications in solving business and research problems.
PO4	**Investigation and research:** Implementation of research methods to investigate specific business problems and draw conclusions.
PO5	**Use of modern techniques/tools**: Ability to analyze and interpret data using mathematical, statistical, ICT and risk management techniques to solve business problems.
PO6	**Business and Society**: Entrepreneurs/Managers with socio-economic value system.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and channelize inclination towards sustainable development.
PO8	**Moral and Ethical values**: Assimilate ethical, value based leadership skills and moral principles.
PO9	**Individual and Team work:** Ability to perform as an individual or leader in diverse settings.
PO10	**Communication and leadership skills:** Harness communication and leadership skills effectively to adapt to the growing business world.
PO11	**Project management and Finance:** Design methods and process; apply skills and knowledge to complete projects in accordance with project acceptance criteria and financial considerations.
PO12	**Lifelong Learning**: Evolve and improve as an individual by updating knowledge to enable oneself to thrive in social and professional life.

OBJECTIVES

1. To develop the skills required for the application of business concepts and techniques learnt in the classroom at the workplace.

2. To provide competent and technical skills personnel to the industry in the area of Marketing, Finance, Human Resource, Data Analytics, Retailing and Logistics And Supply Chain Management. To enhance the employability skills of the management students.

3. To enhance the capability of the students to improve their decision-making skills.

4. To encourage entrepreneurship among students pursuing education in the field of Business Administration.

5. To empower students for pursuing professional courses like MBA, Chartered Accountancy, Company Secretary, etc.,

6. To ensure holistic development of Business administration students

LIST OF BoS MEMBERS

Sl. No.	Category	Name Smt./Sri	Designation	Address for Communication	E-mail and Mobile No.
1	HoD & Chairman	Mrs.Shyla S	Assistant Professor	SBRR Mahajana First Grade College, Mysore	shylas.fgc@mahajana.edu.in 9845859475
2	Faculty Members	1. Dr. Manjunath V	Assistant Professor	SBRR Mahajana First Grade College, Mysore	vmanjunath.joge@gmail.com 9900306941
		2. Dr.Anita B R	Assistant Professor	SBRR Mahajana First Grade College, Mysore	anitaprapti@gmail.com 9901114867
		3. Sunil.N	Assistant Professor	SBRR Mahajana First Grade College, Mysore	sunil9284@gamil.com 9900148051
		4. Dr.Nirmala.N	Assistant Professor	SBRR Mahajana First Grade College, Mysore	nirmalamysore223@gmail.com 7483907737
3	Two Experts from external university	1. Prejna.N.Pai	Assistant Professor	Jain Deemed-to-be-university Bangalore	prejna@gmail.com 9900212911
		2. Sunayana	Assistant Professor & HOD	Amritha school of Arts& Science, Mysore	sunayanadiger@gmail.com 9880980506
4	Nominee by the Vice Chancellor	Dr. R Mahesh	Associate Professor	DoS in Management BIMS, Manasa Gangothri, Mysore	mahesh@bims.uni-mysore.ac.in 9886639536
5	Two Person from Industry /Corporate Sector / Allied area	1. Rajesh R	Chartered Accountant	B S Ravi kumar & Associates Chartered Accountants, Mysore	rajesh@bsra.in 9448229994
		2. Lokesh V	Managing Director & CEO	Innomantra consulting Pvt. Ltd. Bangalore	lokeshv@innomantra.com 9845272555
6	Alumnus	Tejasvi Nathan	Vice President, HR	Swiss Re Global Business solutions India Pvt. Ltd., Bangalore	tejasvinathan@gmail.com 9900084170

Course Structure (NEP 2020)

Discipline Specific Course (DSC), Open Elective (OE)

BBA – I Year

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		
I Semester									
DSC (1) 214129	Management Principles& Practice	4	0	4:0:0	20	20	60	2 ½ hrs.	100
DSC (2) 214130	Fundamentals of Business Accounting	4	0	4:0:0	20	20	60	2 ½ hrs.	100
DSC (3) 214131	Marketing Management	4	0	4:0:0	20	20	60	2 ½ hrs.	100
OE (1)	1. Business Organization 21OEBBA101 2. Office Organization and Management 21OEBBA102 (Any one to be opted)	3	0	3:0:0	20	20	60	2 ½ hrs.	100

II Semester									
DSC (4) 214229	Financial Accounting andReporting	4	0	4:0:0	20	20	60	2 ½ hrs.	100
DSC (5) 214230	Human Resource Management	4	0	4:0:0	20	20	60	2 ½ hrs.	100
DSC (6) 214231/32	Business Environment/ Business Mathematics	4	0	4:0:0	20	20	60	2 ½ hrs.	100
OE (2)	1. People Management 21OEBBA201 2. Retail Management 21OEBBA202 (Any one to be opted)	3	0	3:0:0	20	20	60	2 ½ hrs.	100

DSC (1) Syllabus for BBA
Semester - I

Course Code: 214129	Course Title: Management Principles & Practice
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56 Hrs	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the Students will;

CO1: Acquire knowledge on the concepts of business management, principles and function of management.

CO2: Analyze and interpret the process of planning and decision making.

CO3: Design organization structures based on authority, task and responsibilities.

CO4: Gain knowledge and apply the principles of direction, importance of communication, barrier of communication, motivation theories and leadership styles.

CO5: Analyze the real rime scenarios requirement of good control system and control techniques.

CO6: Evaluate the concepts of CSR as a device for promoting sustainable development.

Syllabus:	**Hours**
Module No. 1: INTRODUCTION TO MANAGEMENT	**10**
Introduction –Meaning, Schools of Management Thought (in brief), Nature and Characteristics of Management - Scope and Functional areas of Management; Management as a Science, Art or Profession; Management and Administration; Principles of Management.	
Module No. 2: PLANNING AND DECISION MAKING	**08**
Nature, Importance and Purpose of Planning - Planning Process; Objectives; Types of plans (Meaning only); Decision making- Importance and steps; MBO and MBE (Meaning only)	
Module No. 3: ORGANIZING AND STAFFING	**12**
Nature and purpose of Organization; Principles of Organizing; Delegation of Authority; Types of Organization - Departmentation, Committees; Centralization vs Decentralization ofAuthority and Responsibility, Span of Control; Nature and importance of Staffing	
Module No. 4: DIRECTING AND COMMUNICATING	**12**
Meaning and Nature of Direction, Principles of Direction; Communication - Meaning and Importance, Communication Process, Barriers to Communication, Steps to overcome Communication Barriers, Types of Communication;. Leadership –Meaning, Formal and Informal Leadership, Characteristics of Leadership; Leadership Styles – Autocratic Style, Democratic Style, Participative Style, Laissez Faire Leadership Styles, Transition Leadership, Charismatic Leadership Style.	
Module No. 5: COORDINATING AND CONTROLLING	**10**
Coordination–Meaning, Importance and Principles. Controlling-Meaning and steps in controlling, Essentials of Effective Control system, Techniques of Control (in brief).	

Module No. 6: BUSINESS SOCIAL RESPONSIBILITY MANAGERIAL ETHICS	**04**
Business Social Responsibility - Meaning, Arguments for and against Business Social Responsibility; Green management - Meaning, Green management concepts; Managerial Ethics – Meaning - Importance of Ethics in Business, Factors that determine Ethical or Unethical behavior.	
Skill Developments Activities: 1. Two cases on the above syllabus should be analyzed by the teacher in the classroomand the same needs to be recorded by the student in the Skill Development Book. 2. Draft different types of Organization structure. 3. Draft Control charts.	
Text Books: 1. Stephen P. Robbins, Management, Pearson 2. Koontz and O"Donnell, Management, McGraw Hill. 3. L M Prasad, Principles of management, Sultan Chand and Sons 4. V.S.P Rao/Bajaj, Management process and organization, Excel Books.GH25 5. Appanniah and Reddy, Management, HPH. 6. T. Ramaswamy : Principles of Management, HPH. **Note: Latest edition of text books may be used.**	

Course Articulation Matrix - 214129

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	-	1	1	-	1	1	2	1	1
CO2	2	2	2	1	1	1	2	2	2	2	-	2
CO3	2	1	2	1	1	1	-	2	1	1	-	2
CO4	2	2	2	-	2	1	-	2	1	3	-	1
CO5	2	3	2	2	2	1	1	1	2	2	1	1
CO6	3	2	1	2	2	1	3	2	2	2	1	2
WA	**2.16**	**1.83**	**1.6**	**1.5**	**1.5**	**1**	**2**	**1.66**	**1.5**	**2**	**1**	**1.5**

DSC (2) Syllabus for BBA

Semester - I

Course Code: 214130	Course Title: Fundamentals of Business Accounting
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week: 4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and problem solving.

Course Outcomes: On successful completion of the course, the Students will;

CO1: Acquire the knowledge on framework of accounting as well accounting standards.

CO2: Pass journal entries, prepare ledger accounts and trail balance independently

CO3: Analyze and prepare cash book and Bank Reconciliation Statement.

CO4: Illustrate and draw up final accounts of proprietary concern.

CO5: Construct final accounts through application of tally.

Syllabus:	**Hours**
Module No. 1: INTRODUCTION TO FINANCIAL ACCOUNTING	**08**
Introduction – Meaning and Definition – Objectives of Accounting – Functions of Accounting– Users of Accounting Information – Limitations of Accounting – Accounting Cycle - Accounting Principles – Accounting Concepts and Accounting Conventions. Accounting Standards – objectives- significance of accounting standards. List of Indian Accounting Standards.	
Module No. 2: ACCOUNTING PROCESS	**12**
Meaning of Double entry system − Process of Accounting − Kinds of Accounts − Rules - Transaction Analysis − Journal − Ledger − Balancing of Accounts − Trial Balance − Problemson Journal, Ledger Posting and Preparation of Trial Balance.	
Module No. 3: SUBSIDIARY BOOKS	**14**
Meaning − Significance − Types of Subsidiary Books −Preparation of Purchases Book, Sales Book, Purchase Returns Book, Sales Return Book, Bills Receivable Book, Bills Payable Book. Types of Cash Book- Simple Cash Book , Double Column Cash Book ,Three column cash book(Problems on Three column cash book) Depreciation Accounting (simple problems on straight line and WDV method), Bank Reconciliation Statement − Preparation of Bank Reconciliation Statement (Problems on BRS)	
Module No. 4: FINAL ACCOUNTS OF PROPRIETARY CONCERN	**10**
Preparation of Statement of Profit and Loss and Balance Sheet of a proprietary concern withspecial adjustments like depreciation, outstanding and prepaid expenses, outstanding and received in advance of incomes, provision for doubtful debts, drawings and interest on capital.	

Module No. 5: ACCOUNTING SOFTWARE	**12**
Introduction-meaning of accounting software, types accounting software-accounting software Tally-Meaning of Tally software − Features − Advantages, Creating a New Company, Basic Currency information, other information, Company features and Inventory features. Configuring Tally - General Configuration, Numerical symbols, accounts/inventory info − master configuration -voucher entry configuration. Working in Tally: Groups, Ledgers,writing voucher, different types of voucher, voucher entry Problem on Voucher entry - Generating Basic Reports in Tally-Trail Balance, Accounts books, Cash Book, Bank Books, Ledger Accounts, Group Summary, Sales Register and Purchase Register, Journal Register, Statement of Accounts, and Balance Sheet**.**	

Skill Developments Activities:

1. List out the accounting concepts and conventions.
2. Prepare a Bank Reconciliation Statement with imaginary figures
3. Collect the financial statement of a proprietary concern and record it.
4. Prepare a financial statement of an imaginary company using tally software.

Text Books:

1. Hanif and Mukherjee, Financial Accounting, Mc Graw Hill Publishers
2. Arulanandam & Raman; Advanced Accountancy, Himalaya Publishing House
3. S.Anil Kumar,V.Rajesh Kumar and B.Mariyappa–Fundamentals of Accounting,
4. Himalaya Publishing House.
5. Dr. S.N. Maheswari, Financial Accounting, Vikas Publication
6. S P Jain and K. L. Narang, Financial Accounting, Kalyani Publication
7. Radhaswamy and R.L. Gupta, Advanced Accounting, Sultan Chand
8. M.C. Shukla and Goyel, Advanced Accounting, S Chand.

Note: Latest edition of text books may be used.

Course Articulation Matrix - 214130

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	-	-	-	-	1	-	-	1	1	1	1
CO2	3	2	2	-	-	1	-	-	1	1	1	1
CO3	3	2	2	-	-	1	-	-	1	1	1	1
CO4	3	2	2	-	-	1	-	-	1	1	1	1
CO5	3	-	1	-	2	1	-	-	1	1	1	1
WA	**3**	**2**	**1.75**	**-**	**2**	**1**			**1**	**1**	**1**	**1**

DSC (3) Syllabus for BBA

Semester - I

Course Code: 214131	Course Title: Marketing Management
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the Students will;

CO1: Acquire knowledge on the concepts and functions of marketing.

CO2: Analyze the marketing environment impacting the business.

CO3: Segment the market and analyze consumer behaviour

CO4: Gain knowledge about 4 P's of marketing and also strategize marketing mix

CO5: Acquire knowledge of 7 P's of service marketing mix.

Syllabus:	**Hours**
Module No. 1: INTRODUCTION TO MARKETING	**10**
Meaning and Definition, Concepts of Marketing, Approaches to Marketing, Functions of Marketing. **Recent trends in Marketing**-E- business, Tele-marketing, M-Business, Green Marketing, Relationship Marketing, Concept Marketing, Digital Marketing, social media marketing and E-tailing (Meaning only).	
Module No. 2: MARKETING ENVIRONMENT	**10**
Micro Environment – The company, suppliers, marketing intermediaries competitors, publicand customers; **Macro Environment**- Demographic, Economic, Natural, Technological, Political, Legal, Socio-Cultural Environment.	
Module No. 3: MARKET SEGMENTATION AND CONSUMER BEHAVIOUR	**10**
Meaning and Definition, Bases of Market Segmentation, Requisites of Sound Market Segmentation; Consumer Behavior-Factors influencing Consumer Behavior; Buying DecisionProcess.	
Module No. 4: MARKETING MIX	**20**
Meaning, Elements of Marketing Mix (Four P's) – Product, Price, Place, Promotion. Product-Product Mix, Product Line, Product Lifecycle, New Product Development, Reasonsfor Failure of New Product, Branding, Packing and Packaging, Labeling(Concepts only) Pricing – Objectives, Factors influencing Pricing Policy, Methods of Pricing; Physical Distribution–Meaning, Factors affecting Channel Selection (Concepts only) . Promotion – Meaning and Significance of Promotion, Personal Selling and Advertising (Meaning Only)	
Module No. 5: SERVICES MARKETING	**06**
Meaning and definition of services, difference between goods and services, features of services, seven P's of services marketing (concepts only).	

Skill Developments Activities:

1. Two cases on the above syllabus should be analyzed and recorded in the skill development
2. Design a logo and tagline for a product of your choice
3. Develop an advertisement copy for a product.
4. Prepare a chart for distribution network for different products.

Text Books:

1. Philip Kotler, Marketing Management, Prentice Hall.
2. Lovelock Christopher, Services Marketing: People, Technology, Strategy, PHI
3. William J. Stanton, Michael J.Etzel, Bruce J Walker, Fundamentals of Marketing, McGrawHill Education.
4. Bose Biplab, Marketing Management, Himalaya Publishers.
5. J.C. Gandhi, Marketing Management, Tata McGraw Hill.
6. Ramesh and Jayanti Prasad: Marketing Management, I.K. International
7. Sontakki, Marketing Management, Kalyani Publishers.
8. P N Reddy and Appanniah, Marketing Management

Note: Latest edition of text books may be used.

Course Articulation Matrix - 214131

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	-	2	2	1	1	2	2	1	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	3	2	2	2	1	2	2	3	1	2
CO4	3	2	3	2	2	1	1	1	2	2	2	2
CO5	2	2	2	1	1	2	2	2	2	2	1	2
WA	**2.2**	**1.8**	**2.2**	**1.75**	**1.8**	**1.8**	**1.4**	**1.6**	**2.0**	**2.2**	**1.4**	**2**

OE (1) Syllabus for BBA

Semester - I

Course Code: 21OEBBA101	Course Title: Business Organisation
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the Students will :

CO1: Acquire the knowledge on the nature, objectives and social responsibilities of business

CO2: Exemplify the different forms of organizations

CO3: Appraise the features and functions of public enterprises

CO4: Identify and compare different types of business combinations

CO5: Illustrate the basic concepts and functions of management

Syllabus:	**Hours**
Module No. 1: INTRODUCTION TO BUSINESS	**10**
Business: Meaning, Nature**,** Scope and Social responsibility of Business, Objectives, Essentials of successful business; Functional areas of business. Concept of Business Organisation.	
Module No. 2: FORMS OF BUSINESS ORGANIZATION:	**12**
Sole proprietorship: Definitions, Features, Merits and Demerits. Partnership: Definitions, partnership deed, Features, Merits and Demerits. Joint Stock Company: Definitions, Features, Merits and Demerits.Co-operatives: Definitions, Features, Merits and Demerits.	
Module No. 3:PUBLIC ENTERPRISES	**08**
Departmental Undertaking: Definitions, Features, Merits and Demerits. Public Corporations: Definitions, Features, Merits and Demerits. Government Companies: Definitions, Features, Merits and Demerits	
Module No. 4:BUSINESS COMBINATIONS	**08**
Meaning Definitions, Causes, Types, Forms, merits and demerits ofBusiness Combinations, Recent Trends in Business Combinations.	
Module No 5: **MANAGEMENT OF ORGANIZATIONS**	**07**
Management**-** Meaning, Definitions, Difference between Management and Administration, Levels of Management, Objectives of Management, Functions of management- planning, organizing, staffing, directing, coordinating, controlling, Principles of Management.	

Skill Developments Activities:

1. Preparation of partnership deed
2. Draw a business tree
3. Make a list of 10 PSUs
4. Prepare a list of different types of business combinations

Text Books:

1. C B. Guptha - Business Organisation and Management, Sultan Chand & Sons.
2. Dr. S. C. Saxena - Business Administration & Management, Sahitya Bhawan.
3. M. C. Shukla - Business Organisation and Management. S Chand & Company Pvt. Ltd.
4. S.A Sherlekar - Business Organization, Himalaya Publishing House.
5. Y.K. Bhushan. Fundamentals of Business Organisation and Management, Sultan Chand& Sons.
6. R.K. Sharma, Business Organisation & Management Kalyani Publishers
7. Dr. I.M. Sahai, Dr. Padmakar Asthana,' **Business Organisation & Administration',** Sahitya Bhawan Publications Agra.

Note: Latest edition of text books may be used.

Course Articulation Matrix - 21OEBBA101

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	-	1	-	1	1	-	1	1
CO2	2	-	-	-	-	1	-	1	1	-	1	1
CO3	2	-	-	-	-	1	-	1	1	-	1	1
CO4	2	-	-	-	-	1	-	1	1	-	1	1
CO5	2	-	-	-	-	1	-	1	1	-	1	1
WA	**2**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**1**	**-**	**1**	**1**

OE (1) Syllabus for BBA
Semester - I

Course Code: 21OEBBA102	Course Title: Office Organisation and Management
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the Students will;

CO1: Acquire knowledge with respect to office organisation and management
CO2: Apply skills in effective office organisation
CO3: Proficiency to maintain office records
CO4: Maintain digital records effectively
CO5: Analyze different types of organisation structures and responsibilities asfuture office managers.

Syllabus:	**Hours**
Module No. 1: FUNDAMENTALS OF OFFICE MANAGEMENT	**08**

Introduction: Meaning, importance and functions of modern office
Modern Office Organisation: Meaning; Steps in office organisation; Principles of Office organisation, Organisation structure types,
Nature of office services: Types of services in a modern office, decentralisation and centralisation of office services, Departmentation of Office
Office management: Meaning, Elements and major processes of Office management
Office Manager: Functions and qualifications of Office manager.

Module No. 2: ADMINISTRATIVE ARRANGEMENT FACILITIES	**07**

Office Accommodation and its Importance: Location of Office, Choice of Location: Urban vsSuburban, Factors to be Considered in Selecting the Site, Securing Office Space,
Office Lay-out: Objectives of Office Lay-out, Principles of Office Lay-out, Steps in Lay-outPlanning, Advantages of a Good Lay-out.
Types of offices: Open Office and Private Office- advantages and disadvantages.

Module No. 3: OFFICE ENVIRONMENT:	**10**

Meaning and Components of Office Environment
Interior Decoration: Colour Conditioning, Floor Coverings, Furnishings,
Furniture and Fixtures: Types of Furniture, Choice between Wooden and Steel Furniture,Principles Governing Selection of Furniture
Lighting and Ventilation,
Noise: Internal Noise, External Noise
Cleanliness, Sanitation and HealthSafety and Security

Module No. 4: RECORDS MANAGEMENT	10
Introduction to records: Importance of Records, types of office records, **Records Management:** Meaning, Principles of Record Keeping, Functions of 'RecordsManagement **Filing:** Elements of Filing and Filing Functions, Objectives and Importance of Filing, Advantages of Filing, Essentials of a Good Filing System, Classification of Files, Filing Procedure or Routine.	
Filing Methods: Horizontal Filing -meaning, types and advantages, Vertical Filing-meaning,equipment used, advantage and disadvantages. **Centralisation and Decentralisation of Filing**- Centralised filing and Decentralised Filing **Office manual**: contents, Importance, types of office manuals. **Indexing:** Meaning, importance, advantages and essentials of good indexing, type of index **Retention and disposal of files**: Meaning and benefits of record retention, need for disposal of files, life-cycle stages of files.	
Module No. 5: OFFICE MECHANISATION AND DATA PROCESSING	**10**
Meaning, Importance and Objectives of Office Mechanisation, Advantages and disadvantages of Office Mechanisation, Factors Determining Office Mechanisation **Kinds of Office Machines:** Duplicating Machines and Photocopying Machines, Accounting, tabulating and computing machines, communication machines **Introduction to Data and Information:** Distinction between Data and Information, Importance of Data and Information, Classification of Data, Classification of Information, Data Lifecycle (chart), **Data Collection Methods-** Primary and secondary data collection methods **Data presentation** Methods of Presentation of Data **Data processing using computers**: Components of Computers, Input and Output Devices, Software used in Computers (names and uses only), Computer Applications in Office' Management, Advantages and Limitations of Computerisation	
Skill Developments Activities: 1. Visit an office and enlist the different types of machines used in the office 2. Identify the different types of stationery used in offices today 3. Draw a data life cycle chart 4. Draw charts indicating different types of office layouts.	

Text Books:

1. S.P Arora, Office Organisation and Management, Vikas Publishing House Pvt Ltd
2. M.E Thakuram Rao, Office organisation and Management, Atlantic
3. Judith Read, Mary Lea Ginn, Record Management, 10th Edition, Cengage Learning.

Note: Latest edition of text books may be used.

Articulation Matrix - 21OEBBA102

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	2	2	1	2	2	2	2	2
CO2	2	2	2	2	2	2	-	2	2	2	2	2
CO3	2	2	2	2	2	2	-	2	2	2	2	2
CO4	2	2	2	2	3	2	-	2	2	1	2	2
CO5	2	2	2	2	2	3	1	2	2	2	2	2
WA	**2.2**	**2**	**2**	**2**	**2.2**	**2.2**	**1**	**2**	**2**	**1.8**	**2**	**2**

DSC (4) Syllabus for BBA

Semester - II

Course Code: 214229	Course Title: Financial Accounting and Reporting
Course Credit (L:T:P):4 (4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will;

CO1: Analyze and prepare final accounts of partnership firms

CO2: Acquire knowledge about the process of public issue of shares and accounting for thesame

CO3: Construct final accounts of joint stock companies.

CO4: Analyze and evaluate vertical and horizontal analysis of financialstatements

CO5: Analyze, interpret and understand company's annual reports.

Syllabus:	**Hours**
Module No. 1: FINAL ACCOUNTS OF PARTNERSHIP FIRM	**10**
Meaning of Partnership Firm, Partnership deed-clauses in partnership deed, Preparation of Final accounts of partnership firm-Trading and Profit and Loss Account, Profit and Loss Appropriation Account, Partners capital account and Balance sheet. Goodwill- Nature, Factors influencing goodwill and methods of valuation of goodwill (Average and super profit methods)	
Module No. 2: ISSUE OF SHARES	**12**
Meaning of Share, Types of Shares – Preference shares and Equity shares – Issue of Shares at par, at Premium, at Discount: Forfeiture and Re-issue of Shares (Theory only), Pro-Rata Allotment; Journal Entries relating to issue of shares; Preparation of respective ledger accounts; Preparation of Balance Sheet in the Vertical form (Practical Problems).	
Module No. 3: FINAL ACCOUNTS OF JOINT STOCK COMPANIES	**12**
Statutory Provisions regarding preparation of Company Final Accounts – Treatment of Special Items, Managerial Remuneration, Tax deducted at source, Advance payment of Tax, Provision for Tax, Depreciation, Interest on debentures, Dividends, Rules regarding payment of dividends, Transfer to Reserves, Preparation of Profit and Loss Account and Balance Sheet (Vertical Form Schedule -III) (Practical Problems).	
Module No. 4: FINANCIAL STATEMENTS ANALYSIS	**12**
Comparative Statements - Comparative Income Statement, Comparative Balance Sheet; Common size Statements – Common Size Income Statement, Common Size Balance Sheet –Trend Percentages. (Analysis and Interpretation)	

Module No. 5: CORPORATE FINANCIAL REPORTING PRACTICES	**10**
Corporate Financial Reporting - meaning, types, characteristics of Corporate financial report, users of corporate financial report; Components corporate financial report– general corporate information, financial highlights, letter to the shareholders from the CEO, management's discussion and analysis; Financial Statements-balance sheet, income statement, cash flow statement, and notes to the financial statements; Auditor's report; Significant Accounting Policies; Corporate Governance Report; Corporate Social Responsibility Report (Discuss only Role and Significance of above components of corporate financial report).	
Skill Developments Activities: 1. Collect financial statement of a company for five years and analyse the same usingtrend analysis. 2. Refer annual reports of two companies and list out the components. 3. Draft a partnership deed as per Partnership Act. 4. List out the accounting policies in annual report of the company	
Text Books: 1. Stephen P. Robbins, Management, Pearson 2. Koontz and O‟Donnell, Management, McGraw Hill. 3. L M Prasad, Principles of management, Sultan Chand and Sons 4. V.S.P Rao/Bajaj, Management process and organization, Excel Books.GH25 5. Appanniah and Reddy, Management, HPH. 6. T. Ramaswamy : Principles of Management, HPH. **Note: Latest edition of text books may be used.**	

Course Articulation Matrix - 214229

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	1	2	1	-	1	2	3	2	2
CO2	3	3	2	2	3	2	2	2	1	2	2	2
CO3	2	2	3	1	2	1	-	2	2	2	2	2
CO4	3	3	3	2	3	1	1	2	2	2	2	2
CO5	2	1	1	2	2	1	-	2	2	2	2	2
WA	**2.6**	**2.4**	**2.2**	**1.6**	**2.4**	**1.2**	**1.5**	**1.8**	**1.8**	**2.2**	**2**	**2**

DSC (5) Syllabus for BBA Semester - II	
Course Code: 214230	Course Title: Human Resource Management
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom's lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the students will;

CO1: Acquire knowledge on the role and responsibility of Human resources management functions on business
CO2: Analyze HRP, Recruitment and Selection process
CO3: Acquire knowledge on induction, training, and compensation aspects.
CO4: Analyze performance appraisal and its process.
CO5: Gather knowledge on Employee Engagement and Psychological Contract.

Syllabus:	**Hours**
Module No. 1: Introduction to Human Resource Management	**10**
Meaning and Definition of HRM – Features Objectives, Differences between Human Resource Management and Personnel Management, Importance, Functions and Process of HRM, Role of HR Manager, Trends influencing HR practices	

Module No. 2: Human Resource Planning, Recruitment & Selection	**14**
Human Resource Planning: Meaning and Importance of Human Resource Planning, Process of HRP **HR Demand Forecasting**- Meaning and Techniques (Meanings Only) and HR supply forecasting. **Job Analysis**: Meaning and Uses of Job Analysis, Process of Job Analysis – Job Description, Job Specification**,** Job Enlargement, Job Rotation, Job Enrichment (Meanings Only) **Recruitment** – Meaning, Methods of Recruitment, Factors affecting Recruitment, Sources ofRecruitment **Selection** – Meaning, Steps in Selection Process, Psychometric tests for Selection, Barriers toeffective Selection, Making Selection effective; Placement, Gamification – Meaning and Features	
Module No. 3: Induction, Training and Compensation	**10**
Induction: Meaning, Objectives and Purpose of Induction. **Training**: Need for training, Assessment of Training Needs andMethods of Training and Development; Kirkpatrick Model; Career Development. **Compensation:** Direct and Indirect forms of Compensation (Meaning Only).	

Module No. 4: Performance Appraisal, Promotion & Transfers	**14**
Performance appraisal: Meaning and Definition, Objectives and Methods of PerformanceAppraisal – Uses and Limitations of Performance Appraisal, Process of Performance Appraisal **Promotion**: Meaning and Definition of Promotion, Purpose of Promotion, Basis of Promotion **Transfer:** Meaning of Transfer, Reasons for Transfer, Types of Transfer.	
Module No. 5: Employee Engagement and Psychological Contract	**08**
Employee Engagement (EE): Meaning and Types of EE, Drivers of Engagement -Measurement of EE, Benefits of EE.	
Skill Developments Activities: 1. Preparation of Job Descriptions and Job specifications for a Job profile 2. Choose any MNC and present your observations on training program 3. Develop a format for performance appraisal of an employee. 4. Discussion of any two Employee Engagement models. 5. Analysis of components of pay structure based on the CTC sent by theCorporate to the institute for the various jobs of different sectors.	
Textbooks: Aswathappa, Human Resource Management, McGraw HillEdwin Flippo, Personnel Management, McGraw Hill C.B.Mamoria, Personnel Management, HPH Subba Rao, Personnel and Human Resources Management, HPHReddy & Appanniah, Human Resource Management, HPH Madhurimalal, Human Resource Management, HPH S.Sadri & Others: Geometry of HR, HPH Rajkumar: Human Resource Management I.K. Intl Michael Porter, HRM and Human Relations, Juta & Co.Ltd. K. Venkataramana, Human Resource Management, SHBPChartered Accountants of India, New Delhi. **Note: Latest edition of textbooks may be used.**	

Course Articulation Matrix - 214230

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	-	-	1	1	-	2	2	2	-	2
CO2	2	2	2	2	1	2	-	2	2	2	-	2
CO3	2	2	2	2	2	2	-	2	2	2	1	2
CO4	2	2	2	2	2	1	-	1	2	2	-	2
CO5	1	2	2	2	1	1	-	2	2	2	-	2
WA	**1.8**	**1.8**	**2**	**2**	**1.4**	**1.4**	**-**	**1.8**	**2**	**2**	**1**	**2**

DSC (6) Syllabus for BBA
Semester - II

Course Code: 214231	Course Title: Business Environment
Course Credit (L:T:P): 4 (4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies.

Course Outcomes: On successful completion Student will;

CO1: Acquire the knowledge on components of business environment.
CO2: Analyze the environmental factors influencing business organisation.
CO3: Evaluate Competitive structure analysis for select industry.
CO4: Illustrate impact of fiscal policy and monetary policy on business.
CO5: Draw Inference about the impact of economic environmental factors on business.

Syllabus:	**Hours**
Module No. 1: INTRODUCTION BUSINESS ENVIRONMENT	**12**
Meaning of business, scope and objectives Business, business environment, Micro and Macro-environment of business (social, cultural, economic, political, legal technological and natural) Impact of these factors on decision making in business, Environmental analysis, and Competitive structure analysis of Business.	
Module No. 2: GOVERNMENT AND LEGAL ENVIRONMENT	**16**
Government Functions of the State, Economic role of government, State intervention in business- reasons for and types of state intervention in business. Impact of Monetary policy,Fiscal policy, Exim policy and industrial policy on business. **Legal environment -** Various laws affecting Indian businesses	
Module No. 3: ECONOMIC ENVIRONMENT AND GLOBAL ENVIRONMENT	**13**
An overview of economic environment, nature of the economy, structure of economy, factors affecting economic environment. **Globalisation of business;** meaning and dimensions, stages, essential conditions of globalisation, foreign market entry strategies, merits and demerits of globalisation of business, Impact of Globalisation on Indian businesses, Forms of globalisation of businesses - MNCs, TNCs etc..	
Module No. 4: TECHNOLOGICAL ENVIRONMENT	**10**
Meaning and features; types of innovation, Impact of Technological changes on business, Technology and Society, Technological Acquisition modes, IT revolution and business,Management of Technology.	
Module No. 5: NATURAL ENVIRONMENT	**05**
Meaning and nature of physical environment. Impact of Natural environment on business.	

Skill Developments Activities:

a) List out key features of recent Monetary policy published by RBI impactingbusinesses.
b) Give your observation as to how technology has helped society.
c) Draft Five Forces Model for Imaginary business.
d) Identify the benefits of Digital transformation in India.

Course Articulation Matrix - 214231

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	1	2	2	2	1	1	1	2
CO2	2	1	1	1	1	1	2	2	1	1	2	2
CO3	2	2	2	2	2	2	-	2	2	2	2	2
CO4	2	1	1	1	1	1	-	-	-	-	1	1
CO5	2	2	2	1	1	2	1	2	2	1	2	2
WA	**2.2**	**1.6**	**1.6**	**1.4**	**1.2**	**1.6**	**1.6**	**2**	**1.25**	**1.25**	**1.6**	**1.4**

DSC (6) Syllabus for BBA
Semester - II

Course Code: 214232	Course Title: Business Mathematics
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom's lecture, tutorials, Problem solving.

Course Outcomes: On successful completion of the course, the students will;

CO1: Apply basic concepts of business maths to solve and interpret application problems in business

CO2: Build types of equation to solve business problem

CO3: Solve problems on Matrices, determinants and evaluate them.

CO4: Utilize the concept of simple interest and compound interest and apply them in day-to-day life.

CO5: Analyze the problems on Arithmetic progression, Geometric progression and c:nstruct logical application of these concepts.

Syllabus:	**Hours**
Module No. 1: NUMBER SYSTEM	**04**
Introduction – Natural Numbers - Even Numbers – Odd Numbers – Integers – Prime Numbers – Rational and Irrational numbers, Real Numbers, HCF and LCM (Simpleproblems).	
Module No. 2: THEORY OF EQUATIONS	**10**
Introduction – Meaning - Types of Equations – Simple/ Linear Equations and SimultaneousEquations (only two variables), Elimination and Substitution Methods only. Quadratic Equation - Factorization and Formula Method ($ax^2 + bx + c = 0$ form only). Simple problems.	
Module No.3: MATRICES AND DETERMINANTS	**16**
Meaning – types – operation on matrices – additions – subtractions and multiplication of two matrices – transpose – determinants – minor of an element – co-factor of an element – inverse – crammers rule in two variables – problems.	
Module No. 4: COMMERCIAL ARITHMETIC	**16**
Simple Interest, Compound Interest including yearly and half yearly calculations, Percentages, Ratios and proportions	
Module No. 5: PROGRESSIONS	**10**
PROGRESSIONS: Arithmetic Progression - Finding the 'n^{th}' term of AP and Sum to nth term of AP.– Finding the 'n^{th}' term of GPand sum to 'n^{th}' term of GP .	

Skill Developments Activities:

1. Develop an Amortization Table for Loan Amount – EMI Calculation.
2. Secondary overhead distribution summary using Simultaneous EquationsMethod.
3. Application of Matrix In Business Problems

Text Books:

1. Saha: Mathematics for Cost Accountants, Central Publishers
2. R.G. Saha and Others – Methods and Techniques for Business Decisions, VBH
3. Dr. SanchetiandKapoor: Business Mathematics and Statistics, Sultan Chand
4. Zamarudeen: Business Mathematics, Vikas
5. R.S Bhardwaj :Mathematics for Economics and Business
6. Madappa, mahadi Hassan, M. IqbalTaiyab – Business Mathematics, Subhash
7. G.R. Veena and Seema : Business Mathematics and Statistics I.K. Intl Publishers

Note: Latest edition of text books may be used.

Course Articulation Matrix - 214232

P / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	1	1	-	1	1	-	1	2
CO2	2	1	1	1	1	1	-	-	1	-	1	1
CO3	2	2	2	2	1	1	-	1	2	1	2	2
CO4	2	2	2	2	1	1	-	1	-	-	1	1
CO5	2	1	1	1	1	1	-	-	-	-	1	1
WA	**2.2**	**1.6**	**1.6**	**1.6**	**1**	**1**	**-**	**1**	**1.3**	**1**	**1.2**	**1.4**

OE (2) Syllabus for BBA Semester - II	
Course Code: 21OEBBA201	Course Title: People Management
Course Credit(L:T:P): 3 (3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom's lecture, tutorials, Group discussion, Seminar, Case studies.

Course outcome: On successful completion of the course, student will:

CO1: Examine the difference between People Management with Human resource Management

CO2: Perform the role of manager in different stages of performance management and List modern methods of performance and task assessment.

CO3: Illustrate the importance of peer network and essentials of communication

CO4: Analyze and relate the concept of motivation.

CO5: Examine the importance of self management, stress management and work life balance

Syllabus:	Hours
Module No. 1: Introduction to People Management	**06**

Diversity in organisation: age, gender, ethnicity, race, and ability. People Management: Meaning, Features, Significance of people management, Difference between People Management and Human Resource Management, impact of individual and organizational factors on people management.

Module No. 2: Getting Work Done and Assessment and Evaluation	**12**

Getting work done: Challenges of getting work done, significance of prioritization and assigning work to team members.

Performance Management: meaning, role of a manager in the different stages of the performance management process, Types of Performance assessment, Assessment and Evaluation Process of evaluation of tasks in the organisation. Modern tools of assessment and evaluation of tasks and performance.

Module No. 3: Building Peer Networks and Essentials of Communication	**12**

Building Peer Networks: Understanding the importance of peer networks in an organization; being able to influence those on whom you have no authority; challenges Peernetworking and different types of people networking in the workplace.

Essentials of Communication: Concept of the communication process with reflection on various barriers to effective communication and ways to overcome, Types of Communication and Channels of Communication.

Module No. 4: Motivation	**08**
Meaning, Importance and need for motivation, team motivation- meaning, importance teammotivation, types of Motivators and Modern methods of motivation	
Module No. 5: Managing Self	**07**
Reflection on what does it mean to be a people manager; building a personal development plan for oneself, Self-Stress Management: Causes for stress, work life Balance, Importance ofWork life balance, Factors influencing Work life Balance.	

Skill Developments Activities:

1. Analyse two cases on any of the above content indicated above.
2. List out the modern tools to performance assessment and evaluation.
3. Conduct a survey of work life balance of working individuals
4. Draft a Career development of working individual in the middle level management.

Text Books:

1. McShane, Steven L. and Mary Ann Von Glinow, Organizational Behavior: Emerging Knowledge and Practice for the Real World. McGraw-Hill, latest edition, ISBN: 0-07- 115113-3.
2. Bernardin, H. John and Joyce E. A. Russell. Human Resource Management: An Experiential Approach. McGraw-Hill, 6/e. ISBN: 0078029163
3. Argyris, C. (1974). Personality vs. Organization. Organizational Dynamics. Vol. 3. No. 2, Autumn.
4. Blume, B. Baldwin, T. and Ryan, K. (2013). Communication Apprehension. A barrier to students leadership, adaptability and multicultural appreciation. Academy of Management Learning & Education, Jun, Vol. 12 Issue 2, p158-172.
5. Colquitt, J.A., LePine, J.A., & Wesson, M.J. (2009) Organizational Behavior: Improving Performance and Commitment in the Workplace (International edition). New York: McGraw-Hill.
6. Goleman, D. (1998). Working with Emotional Intelligence. Bantam Books,

Note: Latest edition of text books may be used.

Course Articulation Matrix - 21OEBBA201

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	-	-	-	1	-	-	1	1	-	1
CO2	2		1	-	-	1	-	-	1	1	-	1
CO3	2		1	-	-	1	-	-	1	1	-	1
CO4	2	1	1	-	-	1	-	-	1	1	-	1
CO5	2		1	-	-	1	-	-	1	1	-	1
WA	**2**	**1**	**1**	**-**	**-**	**1**	**-**	**-**	**1**	**1**	**-**	**1**

OE (2) Syllabus for BBA Semester - II	
Course Code: 21OEBBA202	Course Title: Retail Management
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom's lecture, tutorials, Group discussion, Seminar, Case studies.

Course Outcomes: On successful completion Student will;

Co1: Acquire knowledge on the types and forms of Retail business.

CO2: Review Consumer Behavior in various environment.

CO3: Understand various Retail operations and evaluate them.

CO4: Analyze various marketing mix elements in retail operations.

CO5: Equip with the applications of Information Technology in retail business.

Syllabus:	Hours
Module No. 1: INTRODUCTION TO RETAIL BUSINESS	**08**
Definition – functions of retailing - types of retailing – forms of retail business ownership.Retail theories – Wheel of Retailing – Retail life cycle. Retail business in India: Influencing factors – present Indian retail scenario.	
Module No. 2: CONSUMER BEHAVIOUR IN RETAIL BUSINESS	**08**
Buying decision process and its implication on retailing – Influence of group and individual factors, Customer shopping behaviour, Customer service and customer satisfaction.	
Module No. 3: RETAIL OPERATIONS	**08**
Factors influencing location of Store - Market area analysis – Trade area analysis – Rating Plan method - Site evaluation. Retail Operations: Stores Layout and visual merchandising,Stores designing, Space planning, Inventory management, Merchandise Management, Category Management.	
Module No. 4: RETAIL MARKETING MIX	**14**
Introduction -Product : Decisions related to selection of goods (Merchandise Management revisited) – Decisions related to delivery of service. Pricing : Influencing factors – approaches to pricing – price sensitivity - Value pricing – Markdown pricing. Place : Supply channel – SCM principles – Retail logistics – computerized replenishment system – corporate replenishment policies. Promotion : Setting objectives – communication effects - promotional mix.	
Module No. 5: INFORMATION TECHNOLOGY IN RETAILING	**07**
Non store retailing (e-retailing) - The impact of Information Technology in retailing - Integrated systems and networking – EDI – Bar coding – Electronic article surveillance – Electronic shelf labels – customer database management system.	

Skill Developments Activities:

1. Draw a retail life cycle chart and list the stages
2. Draw a chart showing a store operations
3. List out the major functions of a store manager diagrammatically
4. List out the current trends in e-retailing
5. List out the Factors Influencing in the location of a New Retail outlet

Text Books:

1. Suja Nair; Retail Management, HPH
2. Karthic – Retail Management, HPH
3. S.K. Poddar & others – Retail Management, VBH.
4. R.S Tiwari ; Retail Management, HPH

Note: Latest edition of text books may be used.

Course Articulation Matrix - 21OEBBA202

	PO1	PO2	P03	P04	P05	P06	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	--	1	--	1	2	1	2	2	2
CO2	1	2	1	--	1	--	1	1	1	2	2	1
CO3	1	3	2	--	1	--	2	1	1	2	2	2
CO4	1	3	2	--	1	--	2	1	1	2	1	1
CO5	1	3	2	--	1	--	1	1	1	2	1	1
WA	**1.2**	**2.4**	**1.6**	**--**	**1**	**--**	**1.4**	**1.2**	**1**	**2**	**1.6**	**1.4**

Guidelines for Continuous Internal Evaluation and Semester End Examination:

The CIE and SEE will carry 40% and 60% weightage each, to enable the course to be evaluated for a total of 100 marks, irrespective of its credits. The evaluation system of the course is comprehensive& continuous during the entire period of the Semester. For a course, the CIE and SEE evaluation will be on the following parameters:

Sl. No.	Parameters for the Evaluation	Marks
	Continuous Internal Evaluation(CIE)	
1	Continuous & Comprehensive Evaluation(CCE) – (A)	20Marks
2	Internal Assessment Tests(IAT) –(B)	20Marks
	Total of CIE(A+B)	40Marks
3	Semester End Examination(SEE) – (C)	60Marks
	Total of CIE and SEE(A+B+C)	100Marks

Continuous Internal Evaluation:

a. **Continuous & Comprehensive Evaluation (CCE):**

The CCE will carry a maximum of 20% weightage (20marks) of total marks of a course. Before the start of the academic session in each semester, a faculty member should choose for his/her course, minimum of four of the following assessment methods with 5 marks each (4x5=20 marks)

Individual Assignments

i. Seminars/Class Room Presentations/Quizzes
ii. Group Discussions/Class Discussion/Group Assignments
iii. Case studies/Caselets
iv. Participatory &Industry-Integrated Learning/Industrial visits
v. Practical activities/Problem Solving Exercises
vi. Participation in Seminars/Academic Events/Symposia, etc.
vii. Mini Projects/Cap stone Projects

b. **Internal Assessment Tests (IAT):** The IAT will carry a maximum of 20% weightage (20marks) of total marks of a course. Under this component, two tests will have to be conducted in a semester for 30 marks each and the same is to be scaled downto10 marks each.

PATTERN OF QUESTION PAPER

TIME : 2 ½ HOURS **MARKS: 60**

PART – A

Answer any FIVE of the following questions. Each question carries 2 marks. (5x2= 10)

1. ----------
2. ----------
3. ----------
4. ----------
5. ----------
6. ----------
7. ----------

PART – B

Answer any TWO of the following questions. Each question carries 10 Marks.
(2x10 =20)

8. ----------
9. ----------
10. ----------
11. ----------

PART – C

Answer any TWO of the following questions. Each question carries 15 Marks
(2X15=30)

12. ----------
13. ----------
14. ----------
15. ----------

SBRR Mahajana First Grade College (A)
Board of Studies-Business Administration 2021-22

Sl. No.	Name & Address	Designation	Signature
1	Smt. Shyla S Assistant Professor & HOD SBRR Mahajana First Grade College Mysore shylas.fgc@mahajana.edu.in 9845859475	Chairman	Shyla S 3/9/2022
2	Dr. Manjunath V Assistant Professor SBRR Mahajana First Grade College Mysore vmanjunath.joge@gmail.com 9900306941	Member	Manjunath 3/9
3	Dr.Anita B R Assistant Professor SBRR Mahajana First Grade College Mysore anitaprapti@gmail.com 9901114867	Member	Anita B.R 3/09/2022
4	Sri.Sunil N Assistant Professor SBRR Mahajana First Grade College Mysore 9900148051 sunil9284@gmail.com	Member	Sunil 3/9/22
5	Dr.Nirmala.N Assistant Professor SBRR Mahajana First Grade College Mysore nimalamysore223@gmail.com 7483907737	Member	Nirmala.N 3/9/2022
6	Dr. R. Mahesh Professor DoS in Business Administration, Manasagagothri, Mysuru mahesh@bims.uni-mysore.ac.in 9886639536	Member	03/09/22
7	Ms.Sunayana Assistant Professor & Head Department of Commerce and Management, Amritha Vishwa Vidyapeetham, Mysore sunayanadiger@gmail.com 9880980506	Member	Not Present
8	Ms. Prejna.N.Pai Assistant Professor Jain Deemed-to-be-university Bangalore prejna@gmail.com 9900212911	Member	Not Present

9	Sri.Lokesh V Managing Director & CEO Innomantra Consulting Pvt. Ltd. Bengaluru lokeshv@innomantra.com 9845272555	Member	Not Present
10	Sri.Rajesh R Chartered Accountant rajesh@bsra.in 9448229994	Member	R. Rajesh
11	Sri.Tejasvi Nathan Vice President - HR Swiss Re Global Business Solutions India Pvt Ltd, Bengaluru tejasvinathan@gmail.com 9900084170	Member	Not present

Shyla S
Chairperson
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Mahajana Education Society (R.)

Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012

Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade

College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF BUSINESS ADMINISTRATION

UG ☑

PG ☐

NEP Syllabi for III and IV Semester BBA 2022-23

DEPARTMENT OF BUSINESS ADMINISTRATION

Motto

TO CREATE BUSINESS LEADERS WITH
SOCIAL RESPONSIBILITY

Vision

To create and develop entrepreneurs who exhibit professionalism, accountability, transparency, human values and uphold Indian heritage in high esteem.

Mission

- Giving practical orientation to entrepreneurial ability.
- Giving professional exposure and building up leadership ability by organizing seminars, workshops, management fests and to make students participate in other similar activities.
- Make students to understand the importance of social responsibility in the corporate governance.
- Giving exposure on Indian ethos to future business leaders.

Programme outcomes for Business Administration

POs	Programme Outcomes (POs)
PO1	**Domain knowledge: Acquire** knowledge of management theories and practices with special focus on professional accounting and finance.
PO2	**Problem analysis:** Identify, formulate and analyze complex business problems in a structured approach to focus upon real issues.
PO3	**Design/development of solutions:** Developing solutions by using critical thinking and analytical reasoning with appropriate qualitative, quantitative techniques and software applications in solving business and research problems.
PO4	**Investigation and research:** Implementation of research methods to investigate specific business problems and draw conclusions.
PO5	**Use of modern techniques/tools**: Ability to analyze and interpret data using mathematical, statistical, ICT and risk management techniques to solve business problems.
PO6	**Business and Society**: Entrepreneurs/Managers with socio-economic value system.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and channelize inclination towards sustainable development.
PO8	**Moral and Ethical values**: Assimilate ethical, value based leadership skills and moral principles.
PO9	**Individual and Team work:** Ability to perform as an individual or leader in diverse settings.
PO10	**Communication and leadership skills:** Harness communication and leadership skills effectively to adapt to the growing business world.
PO11	**Project management and Finance:** Design methods and process; apply skills and knowledge to complete projects in accordance with project acceptance criteria and financial considerations.
PO12	**Lifelong Learning**: Evolve and improve as an individual by updating knowledge to enable oneself to thrive in social and professional life.

OBJECTIVES

1. To develop the skills required for the application of business concepts and techniques learnt in the classroom at the workplace.

2. To provide competent and technical skills personnel to the industry in the area of Marketing, Finance, Human Resource, Data Analytics, Retailing and Logistics And Supply Chain Management. To enhance the employability skills of the management students.

3. To enhance the capability of the students to improve their decision-making skills.

4. To encourage entrepreneurship among students pursuing education in the field of Business Administration.

5. To empower students for pursuing professional courses like MBA, Chartered Accountancy, Company Secretary, etc.,

6. To ensure holistic development of Business administration students

LIST OF BoS MEMBERS

Sl. No.	Category	Name Smt./Sri	Designation	Address for Communication	E-mail and Mobile No.
1	HoD & Chairman	Mrs.Shyla S	Assistant Professor	SBRR Mahajana First Grade College, Mysore	shylas.fgc@mahajana.edu.in 9845859475
2	Faculty Members	1. Dr. Manjunath V	Assistant Professor	SBRR Mahajana First Grade College, Mysore	vmanjunath.joge@gmail.com 9900306941
		2. Dr.Anita B R	Assistant Professor	SBRR Mahajana First Grade College, Mysore	anitaprapti@gmail.com 9901114867
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		4. Dr.Nirmala. N	Assistant Professor	SBRR Mahajana First Grade College, Mysore	nirmalamysore223@gmail.com 7483907737
3	Two Experts from external university	1. Prejna.N.Pai	Assistant Professor	Jain Deemed-to-be-university Bangalore	prejna@gmail.com 9900212911
		2. Sunayana	Assistant Professor & HOD	Amritha school of Arts& Science, Mysore	sunayanadiger@gmail.com 9880980506
4	Nominee by the Vice Chancellor	Dr. R Mahesh	Associate Professor	DoS in Management BIMS, Manasa Gangothri, Mysore	mahesh@bims.uni-mysore.ac.in 9886639536
5	Two Person from Industry /Corporate Sector / Allied area	1. Rajesh R	Chartered Accountant	B S Ravi kumar & Associates Chartered Accountants, Mysore	rajesh@bsra.in 9448229994
		2. Lokesh V	Managing Director & CEO	Innomantra consulting Pvt. Ltd. Bangalore	lokeshv@innomantra.com 9845272555
6	Alumnus	Tejasvi Nathan	Vice President, HR	Swiss Re Global Business solutions India Pvt. Ltd., Bangalore	tejasvinathan@gmail.com 9900084170

Course Structure (NEP 2020)

Discipline Specific Course (DSC), Open Elective (OE)

BBA – II Year

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Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		
III Semester									
DSC (7) 224329	Cost Accounting	4	0	4:0:0	20	20	60	2 ½ hrs.	100
DSC (8) 224330	Organizational Behavior	4	0	4:0:0	20	20	60	2 ½ hrs.	100
DSC (9) 224331	Statistics for Business Decisions	4	0	4:0:0	20	20	60	2 ½ hrs.	100
OE (3)	1. Social Media Marketing 22OEBBA301 2. RuralMarketing 22OEBBA302 (Any one to be opted)	3	0	3:0:0	20	20	60	2 ½ hrs.	100
IV Semester									
DSC (10) 224429	Management Accounting	4	0	4:0:0	20	20	60	2 ½ hrs.	100
DSC (11) 224430/31	1. Business Analytics 2. Financial Markets & Services	4	0	4:0:0	20	20	60	2 ½ hrs.	100
DSC (12) 224432	Financial Management	4	0	4:0:0	20	20	60	2 ½ hrs.	100
OE (4)	1. Business Leadership Skills 22OEBBA401 2. Personal Wealth Management 22OEBBA402 (Any one to be opted)	3	0	3:0:0	20	20	60	2 ½ hrs.	100

DSC (7) Syllabus for BBA
Semester - III

Course Code: 224329	Course Title: Cost Accounting
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will;

CO1: Gather knowledge on the elements of cost and preparation of cost sheet.

CO2: Acquire knowledge on materials and analyze the material cost by various methods of pricing material issues.

CO3: Compare and contrast labour cost techniques.

CO4: Differentiate the kinds of overhead costing.

CO5:.Analyze the reconciliation of cost and financial accounts

Syllabus:	**Hours**
Module No. 1: INTRODUCTION TO COST ACCOUNTING	**12**

Introduction: Meaning, Objectives, Importance and Uses of Cost Accounting, Functions of Cost Accounting Department in an Organization, Difference between Cost Accounting and Financial Accounting; Various elements of Cost and Classification of Cost; Cost Object, Cost Unit; Cost Reduction and Cost Control; Limitations of Cost Accounting; Cost Sheet: Meaning and Cost Heads in a Cost Sheet, Presentation of Cost information in Cost Sheet/Statement- Problems on Cost Sheet, Tenders and Quotations, Methods of Costing.

Module No. 2: MATERIALS COST	**12**

Materials: Meaning, Importance and Types of Materials - Direct and Indirect Material.

Materials Procurement: Procedure for procurement of materials and documentation involved in procurement of materials- (Bill of materials, Material requisition note, Purchase requisition note,, Purchase order, Goods received note); Material Storage and Records: Duties of Store keeper, Store records- (Bin cards, Stores Ledger, Stock Control Cards); Material Issues and Valuation: Procedure for material issues, Documents used in material issues- (Material Requisition Note, Material Transfer Note, Materials Return

Note); Valuation of material issues- preparation of Stores Ledger/ Account - FIFO, LIFO,- problems.

Inventory Control: Inventory control techniques and determination of various stock levels- Problems on Level Setting and Computation of EOQ; ABC Analysis, FSN Inventory, VED Inventory, HML Inventory, (Concepts only).

Module No. 3: EMPLOYEE COST	**10**

Employee Cost: Meaning, Components, Classification and Importance of Employee (Labour) Cost in Organizations; Attendance Procedure- Time keeping and Time Booking, Idle Time- Causes and treatment of Normal and Abnormal Idle Time, Overtime- Causes and treatment (Theory only);

Methods of Remuneration (Payment of Wages and Incentives) Problems on calculation of earnings under Time Rate (Straight time rate, Halsey and Rowan Methods) and Piece rate systems, Employee Turnover- Meaning, Reasons and Effects of LTO/ETO.

Module No. 4: OVERHEADS	**12**

Overheads: Meaning and Classification of Overheads; Accounting and Control of Manufacturing Overheads: Estimation and Collection, Cost allocation, Apportionment, Re-apportionment and Absorption of Manufacturing Overheads; Problems on Primary distribution only; Absorption of overheads: Meaning and Methods of Absorption of overheads; Problems on Machine hour rate

Module No. 5: RECONCILIATION OF COST AND FINANCIAL ACCOUNTS	**10**

Reasons for differences in Profits under Financial and Cost Accounts; Procedure for Reconciliation –Ascertainment of Profits as per Financial Accounts and Cost Accounts and Reconciliation of Profits of both sets of Accounts – Preparation of Reconciliation Statement – Problems.

Skill Developments Activities:

- Prepare a Cost Sheet with imaginary figures.
- List the documents required in Inventory Management.
- Demonstrate the valuation of inventory using any one method of pricing material issues.
- Calculate the amount of Wages under Halsey / Rowan Plans, using imaginary data.

Text Books:

1. Jain and Narang, Cost Accounting, Kalyani Publication House.

2. N.K. Prasad, Cost Accounting, Books Syndicate Pvt. Ltd.

3. P C Tulsian, Cost Accounting, MHE India

4. Nigam & Sharma, Cost Accounting, HPH

5. Dr. B. Mariyappa, Cost Accounting, HPH

6. Khanna, Ahuja & Pandey, Practical Costing, S Chand & Co. Ltd.

7. B.S. Raman, Cost Accounting, United Publisher

Course Articulation Matrix - 224329

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	-	-	-	-	1	2	1	1	1
CO2	3	2	2	1	1	1	1	1	1	1	1	1
CO3	2	2	2	-	-	1	1	1	1	1	1	1
CO4	2	2	2	-	-	-	1	1	1	1	1	1
CO5	1	1	1	-	-	-	1	1	1	1	1	1
WA	**2.2**	**1.8**	**1.6**	**1**	**1**	**1**	**1**	**1**	**1.2**	**1**	**1**	**1**

DSC (8) Syllabus for BBA
Semester - III

Course Code: 224330	Course Title: Organisational Behaviour
Course Credit (L:T:P): 4 (4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will:

CO1: Acquire knowledge on role of OB in business organization.
CO2: Analyze group dynamics in an organization.
CO3: Evaluate the change management.
CO4: Structure the process of organizational development.
CO5: Implement the kinds of Interventions in OB.

Syllabus:	**Hours**
Module No. 1: ORGANIZATIONAL BEHAVIOUR AND FOUNDATIONS OF INDIVIDUAL BEHAVIOUR	**10**

Organization Behavior– Meaning, Definition of OB, Importance of OB, Foundations of OB. Individual Behavior - Personal Factors, Environmental Factors, organization systemsand resources Personality-Meaning, Nature, Determinants and Traits of Personality

Perception- Meaning, Factors influencing perception, Perceptual Process, PerceptualErrors, Managing Perceptions.

Module No. 2: GROUP AND TEAM DYNAMICS	**8**

Group Dynamics-meaning, Types of Group, Development of Groups- Stages of Group Development, Determinants of Group Behavior, Team Dynamics- meaning, Types of Teams: Conflict-sources of conflict and ways of resolving conflict, managing interpersonal relationships

Module No. 3: CHANGE MANAGEMENT	**10**

Introduction to Change Management: Importance and Nature of Planned Change; Theories of Planned Change - Action Research Model, Kurt Lewin's Change Model

Introducing Change Effectively: Basic steps, Factors Influencing Change - Resistance to Change, Overcoming Resistance to Change; Empowering People to Manage Change.

Module No. 4: ORGANIZATIONAL DEVELOPMENT	**12**

OD: Meaning and Nature of Organizational Development (OD), Competencies of an OD Practitioner, Ethical Guidelines for OD Practitioners Process of Organizational Development: Meaning of Diagnosing, Comprehensive Model for Diagnosing Organizational Systems (Organizational Level, Group Level and Individual Level)

Module No. 5: OD INTERVENTIONS	**16**

Designing Effective OD Interventions: How to Design Effective Interventions, Overview of OD interventions - Human Process Interventions, Techno Structural Interventions, HRM Interventions and Strategic Change Interventions, Conditions for optimal success of OD

(a) Human Process Interventions

T-Groups, Process Consultation, Third–party Intervention; Team building; Organization Confrontation Meeting, Inter-group relation Intervention: Microcosm Group; Large Group Intervention: Open –Systems Method, and Open-Space Method(in brief)

(b) Techno Structural Interventions

Restructuring Organization: Structural Design: Functional structures, Divisional structure - Product structure, Geographic and Market structure, Metrics structure, Network structure, Boundary less organization; (in brief)

Skill Developments Activities:

- Two cases on the above syllabus should be analyzed and record in the skill development
- Draw Blake and Mouton managerial grid
- List the determinants of personality

Text Books:

1. Fred Luthans, Organizational Behaviour. McGraw Hill
2. Robbins, Organizational Behaviour, International Book House.
3. K. Aswathappa, Organizational Behaviour, HPH.
4. Appanniah and, Management and Behavioural Process, HPH
5. Sharma R.K and Gupta S.K, Management and Behaviour Process, KalyaniPublishers.

Course Articulation Matrix - 224330

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	-	2	2	2	2	2
CO2	2	1	1	1	1	1	-	2	2	2	2	2
CO3	2	2	1	1	1	2	1	2	2	2	2	2
CO4	2	2	2	2	2	2	1	2	2	2	1	2
CO5	2	2	2	2	2	2	-	1	2	2	2	2
WA	2.2	1.6	1.4	1.4	1.4	1.8	1	1.8	2	2	1.8	2

DSC (9) Syllabus for BBA
Semester - III

Course Code: 224331	Course Title: Statistics for Business Decisions
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will;

CO1: Understand the requirements of statistical framework
CO2: Construct and visualize the data.
CO3: Determine the data adequacy for analysis.
CO4: Review the data by using various tools.
CO5: Illustrate and analyze the impact of probability.

Syllabus:	**Hours**
Module No. 1: INTRODUCTION TO STATISTICS	**12**

Introduction – Meaning, Functions and Uses of Statistics; Collection of Data - Techniques of Data Collection – Census Technique and Sampling Technique (Concepts). Classification: Meaning, and Methods of Classification of Data, Tabulation: Meaning, Parts of a Table – Simple problems on Tabulation; Diagrammatic Presentation: Bar Diagrams – Simple Bars, Multiple Bars, Percentage Sub-divided Bar Diagram; Two Dimensional Diagrams – Pie Diagram.

Module No. 2: MEASURES OF CENTRAL TENDENCY AND DISPERSION	**14**

Measures of Central Tendency: Calculation of Arithmetic Mean, Median and Mode for Individual, Discrete and Continuous Series – Problems; Empirical relation between Mean, Median and Mode.

Measures of Dispersion: Absolute and Relative measures of Range, Quartile deviation, Standard Deviation in Individual, Discrete and Continuous Series – Problems
Measures of Skewness: Calculation of Karl Pearson's (Uni-modal) and Bowley's Co- efficient of Skewness

Module No. 3: CORRELATION AND REGRESSION ANALYSIS	**10**
Correlation Analysis - Meaning, Types of Correlation, Calculation of Karl Pearson's Coefficient of Correlation, Computation of Probable Error, Spearman's Rank Coefficient of correlation- problems. Regression Analysis – Concept of Regression, Regression equations- Problems. **TIME SERIES ANALYSIS**: Meaning, Components, fitting a straight-line trend using Least Square Method (Problems where ΣX=0 only), calculation and estimation of trend values.	
Module No. 4: TIME SERIES ANALYSIS	**10**
Meaning, Components, fitting a straight-line trend using Least Square Method (Problems where ΣX=0 only), calculation and estimation of trend values.	
Module No. 5: INDEX NUMBERS	**10**
Index number, Construction of Index number, Methods of Index number - simple aggregate method, Weighted method (Laspeyres, Paashes, Marshal - Edgeworth and Fishers Ideal Index number). Tests of Adequacy (Unit test, TRT, FRT, Circular test). Consumer Price Index number	
Skill Developments Activities: **a)** Data Visualization practical session Using Tableu/Power BI. b) Execute Average, Variance, Standard Deviation, CV, Covariance using Excel. c) Execute and Analyse Regression Model using Excel, d) Practical session on Time series models using GRETL e) Collect past years' Indian consumer price index data (as of the current base year)and analyse its impact on any macroeconomic indicator.	
Text Books: **1.** S P Gupta: Statistical Methods- Sultan Chand 2. Dr. B N Gupta: Statistics, Sahithya Bhavan 3. S.C Gupta: Business Statistics, HPH 4. Elhance: Statistical Methods, Kitab Mahal 5. Chikoddi & Satya Prasad: Quantitative Analysis for Business Decision, HPH 6. Sanchethi and Kapoor: Business Mathematics, Sultan Chand	

Course Articulation Matrix - 224331

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	1	-	-	-	-	1	2	1	1
CO2	2	2	2	2	2	-	-	-	1	-	-	1
CO3	2	2	2	2	1	1	-	-	-	-	1	1
CO4	2	2	2	1	1	-	-	-	1	-	1	1
CO5	-	-	-	-	-	-	-	-	-	-	-	-
WA	2	1.75	2	1.5	1.33	1	-	-	1	2	1	1

OE (3) Syllabus for BBA
Semester - III

Course Code: 22OEBBA301	Course Title: Social Media Marketing
Course Credit (L:T:P): 3 (3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will:

CO1: Acquire knowledge of social media marketing goal setting for successful online campaigns.
CO2: Analyze the effective social media marketing strategies for various types ofindustries and businesses.
CO3: Design social media content and create strategies to optimize the content's reach to the target audience.
CO4: Appraise the reach and track progress in achieving social media objectives witha variety of measurement tools and metrics.
CO5:Design a suitable social media campaign for the business goals.

Syllabus:	**Hours**
Module No. 1: Social Media Introduction	**10**
Introduction to social media, how to build a successful Social Media Strategy, Goal setting, Overview of Global E-Marketing Issues, Country and Market Opportunity Analysis, User engagement on social networks; Social advertising; Social, media analytics; Impact of online reputation; Social Technology and its marketing influence in India.	
Module No. 2: Facebook -Instagram marketing	**10**
Exploring the use of a Facebook page, Facebook Ad campaign, Facebook groups, Hashtags, Instagram, Creating automation for Instagram, Audience Insights, page Insights, exploring the various IG content types, Setting a theme and flow on Instagram, and generating Leads.	
Module No. 3: Twitter Marketing	**08**
Creating a Twitter account, optimizing a page, content types, posting contents, Integrating apersonal brand on Twitter, Twitter Analytics & Ads, post assistants and automation for Twitter.	

Module No. 4: YouTube marketing	**08**
Youtube marketing, creating a youtube channel, posting content, youtube analytics, Google Pages for YouTube Channels, Video Flow, Verify Channel, Webmaster Tool –Adding Asset.	
Module No. 5: Search Engine Optimization-Recent trends and challenges	**09**
Search Engine Optimisation (SEO) Introduction, Understanding SEO, User Insights, Benefits and Challenges, Content Marketing, Traditional Media vs Social Media, recent trends and challenges in Social Media marketing.	

Skill Developments Activities:

a) Prepare Facebook Page in your name.
b) Open a YouTube channel.
c) Create a blog and write an article on Climate change.
d) Create a search engine optimization (SEO) dashboard.

Text Books:

1. Annmarie Hanlon (2022), Digital Marketing Strategic Planning & Integration,2nd Edition, SAGE Publications Ltd.
2. Matt Golden (2022), Social Media Marketing, 1st Edition, Bravex Publications.
3. Simon Kingsnorth (2022), The Digital Marketing Handbook: Deliver Powerful Digital Campaigns, 1st Edition, Kogan Page.
4. Melissa Barker, Donald I. Barker, Nicholas F. Bormann and Debra Zahay (2016), Social Media Marketing: A Strategic Approach, 2nd Edition, Cengage Learning.
5. Tracy L. Tuten and Michael R. Solomon, (2016), Social Media Marketing, 2nd Edition, Sage Publications India Private Limited.

Course Articulation Matrix - 22OEBBA301

	PO1	PO2	P03	P04	PO4	P05	P06	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	3	1	1	3	--	--	1	1	2	3	2
CO2	2	2	2	1	2	3	1	1	1	1	2	2	2
CO3	1	1	1	1	1	3	1	1	2	1	2	2	2
CO4	2	1	2	2	2	3	1	1	2	1	2	2	2
CO5	2	2	2	2	2	3	1	1	2	1	2	2	2
WA	1.8	1.4	2	1.4	1.6	3	1	1	1.6	1	2	2.2	2

OE (3) Syllabus for BBA
Semester - III

Course Code: 22OEBBA302	Course Title: Rural Marketing
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will

CO1: Explore the importance and application of various concepts of rural marketing.
CO2: Examine the appropriate selection of the segmentation, targeting and positioning strategies along with the environmental factors that influence rural consumers' buying behavior.
CO3: Design a Pricing Strategy that suits the characteristics of rural products and the stage in the product life cycle.
CO4: Identify the appropriate marketing communication and rural distribution channel plans to promote and deliver the products.
CO5: Analyze the recent trends in Rural marketing and the application of digital technology in rural marketing.

Syllabus:	**Hours**
Module No. 1: Introduction to Rural Marketing	**10**
Nature and scope of rural marketing, rural vs urban markets, concepts and classification of rural markets, rural marketing environment: rural population, occupation pattern, income generation, location of the rural population, expenditure pattern, literacy level, land distribution, land use pattern, irrigation, development programs, infrastructure facilities.	
Module No. 2: Rural Consumer Behavior	**08**
Consumer buying behavior in rural markets, factors affecting consumer behaviour, rural consumer buying process, the rise of rural consumerism. Market segmentation – Bases for segmenting rural consumer markets.	
Module No. 3: Rural Product and Pricing Strategy	**08**
Rural product, Rural product classification, product life cycle, Product Life Cycle strategies in rural markets, New Product Development in rural markets, Branding for rural markets. Pricing for rural markets – Factors and strategies.	
Module No. 4: Rural Distribution and Communication Strategy	**09**
Wholesaling and retailing in the rural market, rural mobile traders, rural distribution models- FMCG companies, durable companies, Service organizations, emerging distribution models. Rural communication strategy, challenges in rural Communication, creatingpromotion mix for rural audiences: advertisement, sales promotion, publicity.	

Module No. 5: Regulations and Recent Trends in Rural Marketing	**10**
Regulated market, Regulated Market in India, Future of Regulated Markets in India, Role of Govt in Developing rural marketing, Public Distribution Systems (PDS), Food Corporation of India, Self Help Groups (SHG's). Agricultural Credit Policy, Digitalizing rural India, online marketing reach in the rural market, recent trends in packing, labelling, grading, transporting, order processing, payment methods, storage and warehousing and Corporate farming.	
Skill Developments Activities: **a)** Prepare a Product life cycle for a Rural product **b)** Select a Rural Product and conduct a Consumer Satisfaction Survey **c)** Prepare an advertisement copy for a rural product **d)** Visit an APMC Yard/Mandi's and prepare a report on any one Agri product pricing.	
Text Books: 1. Debarun Chakrabaorty and Soumya Kanti Dhara, et al. (2021), Rural Marketing inIndia: Texts and Cases, 1st Edition Atlantic Publishers and Distributors Pvt Ltd 2. Acharya SS and Agarwal NL (2019), Agricultural Marketing in India, 6th Edition,Oxford & IBH Publishing Co Pvt Ltd. 3. Dinesh Kumar and Punam Gupta (2019), Rural Marketing), 1st Edition, SAGEPublications India Pvt Ltd. 4. C. G. Krishnamacharyulu (2010), Rural Marketing: Text and Cases, 2nd Edition, Pearson India Education Services Pvt Ltd. 5. T.P.Gopalaswamy (2009) Rural Marketing-Environment, Problems and Strategies, 3rd Edition, Vikas Publishing House.	

Course Articulation Matrix – 22OEBBA302

	PO1	PO2	P-3	P-4	PO4	P-5	P-6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	-	1	1	-	-	-	1	1	-	-	-	-	1
CO2	1	-	-	1	-	-	1	1	-	-	-	-	-
CO3	1	-	1	-	-	-	-	1	-	-	-	1	-
CO4	-	-	-	-	-	-	1	1		1	1	-	-
CO5	1	1	-	-	1	1	-	-	-	-	-	-	-
WA	1	1	1	1	1	1	1	1	-	1	1	1	1

DSC (10) Syllabus for BBA Semester - IV	
Course Code: 224429	Course Title: Management Accounting
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will:

CO1: Acquire the knowledge with respect to the concept of Management Accounting.
CO2: Analyze the ratios and apply the same on given case.
CO3: Construct Cash flow statement.
CO4: Apply Marginal costing techniques to make business decisions.
CO5: Utilize the standard costing technique for implementing control over cost.

Syllabus:	**Hours**
Module No. 1: INTRODUCTION TO MANAGEMENT ACCOUNTING	**8**
Introduction- Meaning and Definition – Objectives – Nature and Scope–Functions- Role of Management Accountant, Relationship between Financial Accounting and Management Accounting, Relationship between Cost Accounting and Management Accounting, advantages and limitations of Management Accounting.	
Module No. 2: RATIO ANALYSIS	**14**
Introduction-Meaning and Definition of ratio, Meaning of Accounting ratio, and Ratio Analysis – Uses and Limitations –Classification of ratios- Liquidity ratios, Profitability ratios and Solvency ratios. Problems on conversion of financial statements into ratios and ratios into financial statements.	
Module No. 3: CASH FLOW ANALYSIS	**12**
Meaning and Definition of Cash Flow Statement – Concept of Cash and Cash Equivalents - Uses of Cash Flow Statement – Limitations of Cash Flow Statement– Differences between Cash Flow Statement and Fund Flow Statement – Provisions of Ind. AS-7. Procedure for preparation of Cash Flow Statement – Cash Flow from Operating Activities – Cash Flow from Investing Activities and Cash Flow from Financing Activities – Preparation of Cash Flow Statement according to Ind. AS- 7	

Module No. 4: MARGINAL COSTING	**12**
Introduction-Meaning and definition of marginal cost, marginal costing, features of marginal costing- terms used in marginal costing – P/V ratio, BEP, Margin of Safety, Angle of Incidence and Break-Even Chart. Break Even Analysis- assumption and uses-problems. Decision Making-Make or Buy, -problems on decision making.	
Module No. 5: STANDARD COSTING	**10**
Historical costing - Introduction – Meaning & Definition of Standard Cost and Standard Costing - Advantages & Disadvantages of Standard Costing –preliminaries in establishing system of standard costing – Variance Analysis – Material Variance, Labour Variance and Overheads Variance – Problems on Material Variances and Labor Variances only.	
Skill Developments Activities: • Collect the financial statement of a company and calculate important ratios. • Collect the annual report of a company and prepare a cash flow statement. • Prepare a Break-even-chart with imaginary figures. • Prepare a flexible budget using imaginary figures of at least three levels. • Draft the chart of various total cost variances.	
Text Books: **1.** Dr. S.N. Maheswari, Management Accounting, Mahavir Publications 2. T.S.Sexana, Advanced Cost and Management Accounting, Sultan Chand 3. Sudhindra Bhat, Management Accounting, Excel Books. 4. Dr. S.N. Goyal and Manmohan, Management Accounting, S.N. Publications. 5. B.S. Raman, Management Accounting, United Publishers. 6. Sharma and Gupta, Management Accounting, Kalyani Publishers. 7. M Muniraju & K Ramachandra, Management Accounting, HPH **8.** PN Reddy & Appanaiah, Essentials of Management Accounting, HPH**.**	

Course Articulation Matrix - 224429

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	-	-	1	-	-	-	1	1	**1**
CO2	3	2	2	-	-	1	-	-	-	1	1	**1**
CO3	3	2	2	-	-	1	-	-	-	1	1	**1**
CO4	3	2	2	-	-	1	-	-	-	1	1	**1**
CO5	3	2	2	-	-	1	-	-	-	1	1	**1**
WA	**3**	**1.8**	**1.8**	**-**	**-**	**1**				**1**	**1**	**1**

DSC (11) Syllabus for BBA Semester - IV	
Course Code: 224430	Course Title: Business Analytics
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will;

CO1: Illustrate the Data Types and storage of Data.
CO2: Classify and compare the various types of analytics and data models.
CO3: Demonstrate visualization of data.
CO4: Make use of the data mining and processing of data.
CO5: Interpret the concepts of different analytics model.

Syllabus:	Hours
Module No. 1: INTRODUCTION TO BUSINESS ANALYTICS	**12**

Business Analytics, Terminologies used in Analytics: Business Analytics, Business Intelligence, Meaning, Importance, Scope, Uses of Business Analytics, Architecture of Business Analytics, Types of Analytics: Descriptive, Diagnostics, Predictive, Prescriptive, Application of Business analytics, Introduction to Data Science and Big Data.

Module No. 2: ROLE OF DATA IN THE ORGANIZATION	**10**

Sources of data, Use of Data in Decision making, Importance of data quality, dealing with missing or incomplete data, Types of Digital Data- Structured, Semi Structured, Unstructured Data. Data warehouse, Data mining, Data Integration – What, need, advantages, approaches of Data integration, Data profiling.

Module No. 3: TOOLS USED FOR DATA ANALYTICS	**12**

Introduction to data analytics software – Types of data analytics software – open source and proprietary software.

Lab sessions:

R, JAMOVI, GRETL, Python: Installation of software –Installation of packages / library -Importing of data – Saving of data – Run descriptive Statistics – Interpret result – plotting of charts – inferences of chart. (Using all the four specified softwares).

Module No. 4: DATABASE ORIENTATION	**12**

Database definition, types of structures, DBMs, RDBMS, Relational Database Language , Introduction to SQL, Features of SQL, SQL Languages, DDL commands - Create, Add, Drop, Constraints in SQL, DML Commands – Insert, Delete, Update, Data Query Language – Where clause, Order by, Group by, DCL commands – Grant, Revoke, TCL Commands – Commit, Roll Back, Save point. Aggregate Functions, Relational Algebra.

Module No. 5: DATA VISUALIZATION USING TABLEAU (PUBLIC VERSION)	**10**

Introduction to Dimensions and measures, Types of Charts, (Pie Chart, Column Chart, Line Chart, Bar Chart, Area Chart, Scatter Chart, Bubble Chart, Stock Chart), Basic understanding in dashboard and storyboard. (Explain using practical examples and students executes the examples using tableau.)

Skill Developments Activities:

1. Prepare tree map chart using Tableau.
2. Run a descriptive statistic using R and Python software.
3. Execute a summary chart in JAMOVI.
4. Execute DCL and TCL Command in SQL.

Text Books:

1. Business Analytics: Text and Cases, Tanushri Banerjee, Arvindram Banerjee, Publisher: Sage Publication
2. Business Analytics, U Dinesh Kumar, Publication: Wiley
3. Business Analytics, R. Evans James, Publisher: Pearson
4. Fundamental of Business Analytics, Seema Acharya R N Prasad, Publisher: Wiley
5. Business Analytics: Data Analysis and Decision Making, Albright and Winston published by Cengage Learning**.**
6. Swain Scheps, Business Intelligence for Dummies.
7. Rick Sherman, Business Intelligence Guidebook: From Data Integration to Analytics
8. Cindi Howson. Successful Business Intelligence, Second Edition: Unlock the Value of BI & Big Data
9. Seema Acharya R N Prasad, Fundamentals of Business Analytics, 2ed, Wile

Course Articulation Matrix - 224430

	PO1	PO2	P-3	P-4	PO4	P-5	P-6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	2	-	2	-	2	-	-	-	-	-	-	-	1
CO2	2	1	2	2	-	1	-	-	-	-	-	2	1
CO3	2	2	2	2	2	2	-	-	-	-	1	1	-
CO4	2	2	2	2	2	2	-	-	-	-	-	-	-
CO5	2	2	2	2	1	1	-	-	-	-	-	-	-
WA	2	1.75	2	2	1.75	1.5	-	-	-	-	1	1.5	1

DSC (11) Syllabus for BBA Semester - IV	
Course Code: 224431	Course Title: Financial Markets & Services
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will;

CO1: Acquire knowledge on the concepts of financial system.
CO2: Examine the current structure and functioning of financial institutions
CO3: Acquire knowledge on the concepts of financial services.
CO4: Analyze and interpret the trading process of Instruments.
CO5: Critically evaluate the concept of stock market.

Syllabus:	**Hours**
Module No. 1: OVERVIEW OF FINANCIAL SYSTEM	10
Financial System – Features, Constituents of Financial System; Financial Institutions; Financial Services; Financial Markets and Financial Instruments.	
Module No. 2: FINANCIAL INSTITUTIONS	14
Characteristics of Financial Institutions, Broad Categories – Money Market Institutions and Capital Market Institutions. Objectives and Functions of Industrial Finance Corporation of India, Industrial Development Bank of India, State Financial Corporations, Industrial Credit and Investment Corporation of India, EXIM Bank of India, National Small Industrial Development Corporation, National Industrial Development Corporation, RBI Measures for NBFCs.	
Module No. 3: FINANCIAL SERVICES	12
Financial Services – Meaning, Objectives, Functions, Characteristics; Types of Financial Services - Merchant Banking – Functions and Operations, Leasing, Mutual Funds, Venture Capital & Credit Rating.	
Module No. 4: FINANCIAL MARKETS AND INSTRUMENTS	10
Meaning and Definition, Role and Functions of Financial Markets, Constituents of Financial Markets; Money Market Instruments, Capital Market and Instruments; SEBIguidelines for Listing of Shares and Issue of Commercial Papers.	

Module No. 5: STOCK MARKETS	10
Introduction - Functions of Stock Exchange; Stock Market Operations - Trading, Settlement and Custody (Brief discussion on NSDL & CSDL); Brief discussion of BSE, NSE and OTCEI.	
Skill Developments Activities: • Visit any financial institution and prepare a report regarding its structure,functions and performance. • Analyze the ratings given by any credit rating agency, for at least 5 companies. • Conduct a mock stock-trading session and record the outcome. • Identify a company of your choice and record its share prices for one month.	
Text Books: **1.** L.M. Bhole, Financial Institutions & Markets, McGraw Hill 2. Khan, M.Y, Indian Financial System, McGraw Hill 3. Sharma, Meera, Management of Financial Institutions, Eastern Economy Edition 4. Bhole and Mahakud, Financial Institutions and Markets – Structure, Growth and Innovations, McGraw Hill 5. Guruswamy, S., Financial Services and System, McGraw Hill 6. Edminister. R.O, Financial Institutions, Markets & Management, McGraw Hill 7. Khan. M.Y, Indian Financial System, Vikas Pub. House 8. H.R Machiraju, Indian Financial System, Vikas Pub. House 9. E.Gorden & K. Nataraj, Financial Markets and Services, HPH	

Course Articulation Matrix - 224431

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	-	-	1	2	2	2	2
CO2	2	2	2	2	2	2	-	1	1	1	1	1
CO3	3	2	2	1	1	1	-	-	1	1	1	1
CO4	3	3	2	2	3	2	-	1	2	2	2	2
CO5	3	3	2	3	3	2	-	1	2	2	2	2
WA	**2.6**	**2.2**	**1.8**	**1.8**	**2**	**1.75**	**-**	**1**	**1.6**	**1.6**	**1.6**	**1.6**

DSC (12) Syllabus for BBA Semester - IV	
Course Code: 224432	Course Title: Financial Management
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Course Outcomes: On successful completion of the course, the Students will;

CO1: Evaluate the goals of financial management.
CO2: Appraise the concepts of time value of money.
CO3: Evaluate the different models of dividend policy.
CO4: Analyze the business problem related to investments.
CO5: Appraise the working capital requirements in an organization.

Syllabus:

Module No. 1: INTRODUCTION TO FINANCIAL MANAGEMENT	**Hours**
Introduction – Meaning of Finance, Business Finance, Finance Functions, Organization structure of Finance Department; Financial Management – Goals of Financial Management, Financial Decisions, Role of a Financial Manager; Financial Planning – Steps in Financial Planning, Principles of Sound Financial Planning, Factors influencing a Sound Financial Plan	**12**
Module No. 2: TIME VALUE OF MONEY	
Meaning, Need, Future Value (Single Flow, Uneven Flow & Annuity); Present Value (Single Flow – Uneven Flow & Annuity); Doubling Period; Concept of Valuation -- Valuation of Bonds, Debentures and Shares (Simple Problems)	**12**
Module No. 3: FINANCING & DIVIDEND DECISIONS	
Financing Decision: Sources of Long-Term Finance -- Meaning of Capital Structure, Factors influencing Capital Structure, capital structure theories, Optimum Capital Structure – EBIT, EPS Analysis, Leverages – Problems Dividend Decision: Meaning & Determinants of Dividend Policy, Types of Dividends, Bonus Shares (Meaning only)	**12**

Module No. 4: INVESTMENT DECISION	
Meaning and Scope of Capital Budgeting, Features & Significance, Techniques --Payback Period, Accounting Rate of Return, Net Present Value, Internal Rate of Return and Profitability Index (Problems)	**10**
Module No. 5: WORKING CAPITAL MANAGEMENT	
Working Capital -- Concept of Working Capital, Significance of Adequate Working Capital, Types of Working Capital, Problems of Excess or Inadequate Working Capital, Determinants of Working Capital, Sources of Working Capital, Estimation of Working Capital (Simple Problems)	**10**

Skill Developments Activities:

- Calculate Equated Installment and prepare Loan Repayment schedule for the loan borrowed by your family / friend.
- Identify the capital budgeting and capital structure practices followed in any firm/company of your choice (using primary/secondary data)
- Visit a business entity and estimate working capital requirement for the entity.
- Develop spreadsheet models for different components of time value of money and capital budgeting.

Text Books:

1. I M Pandey, Financial Management. Vikas Publication.
2. Prasanna Chandra, Financial Management, TMH
3. S N Maheshwari, Financial Management, Sultan Chand
4. Khan and Jain, Financial Management, TMH
5. Dr. V Rajeshkumar and Nagaraju V, Financial management, MH India
6. Dr. Aswathanarayana.T ,Financial Management, VBH
7. K. Venkataramana, Financial Management, SHBP
8. G. Sudarshan Reddy, Financial Management,
9. Sharma and Shashi Gupta, Financial Management, Kalyani Publication

Course Articulation Matrix – 224432

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	2	1	1	1	2	2	2	1	2
CO2	3	2	2	2	2	1	1	1	1	1	3	2
CO3	3	3	3	2	3	1	-	2	2	2	3	2
CO4	3	3	3	2	2	1	-	2	2	2	3	2
CO5	3	2	2	2	2	1	-	2	2	2	2	2
WA	2.8	2.2	2.2	2	2	1	1	1.8	1.8	1.8	2.4	2

OE (4) Syllabus for BBA Semester - IV	
Course Code: 22OEBBA401	Course Title: Business Leadership Skills
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will

CO1: Acquire knowledge about the significance of leadership skills for effective people management

CO2: Evaluate comprehension of leadership through various leadership theories

CO3: Analyze and interpret different leadership styles, types, patterns and functions

CO4: Implement various leadership approaches for effective management of people

CO5: Examine the recent trends in the area of business leadership

Syllabus:	Hours
Module No. 1: Introduction to business leadership	10
Introduction to business leadership, meaning/definition of leadership, evolution and growth of leadership; functions and characteristics of leadership; latest trends/current scenario of business leadership.	
Module No. 2: Leadership from managerial perspective	12
Nature of leadership, Significance or importance of leadership, Qualities of an effective leader, leader v/s manager; authority v/s leadership; formal v/s informal leadership; different roles of leadership; different levels of leadership;	
Module No. 3: Leadership from theoretical perspective	8
Great man theory, Trait theory, Situational leadership theory, transactional leadership, transformational leadership theory, Likert's Management System; Fielder's contingency model, Blake and Mouton's Managerial Grid.	
Module No. 4: Leadership from an operational perspective	8
Leadership styles: a) Autocratic leadership, b) Bureaucratic leadership, c) Democratic leadership, and d) Laissez faire leadership;	
Module No. 5: Leadership strategies	7
Leadership Strategies a) leading from the front, b) supporting leadership, c) interactive leadership. Group conflict, leader's role in managing group conflict; challenges in leadership; change management.	

Skill Developments Activities:

1. Collect information about the real time corporate leaders with different leadership styles & discuss their leadership styles and traits in the class room.
2. Present the students with a workplace problem, and have each student participant write down what they would do to solve it. Then, have each participant read their response aloud. This can help the teacher to identify the types of leadership styles that are present among the student participants and thereby highlight and discuss them in the class.
3. Student can make a presentation on any famous corporate/political personality

   covering their leadership style, their approach to people management, their effectiveness in managing conflicts and how did they manage the crisis situations and so on.

Text Books:

1. Northouse, P. (2007). Leadership: Theory and Practice. Sage Publications.
2. Stephen, R. P. (1988). Orgaizational Behaviour - Concepts, controversies and Appications.

   New Delhi: Printice Hall of India Ltd.
3. Subba Rao. (2018). Organizational Behaviour (18th ed.). Himalaya Publishing House.
4. Subba Rao. (2022). Personnel and Human Resource Management (5th ed.).

   Bangalore: Himalay Publishing House.

Course Articulation Matrix – 22OEBBA401

	PO1	PO2	P-3	P-4	PO4	P-5	P-6	PO7	PO8	PO9	PO1-	PO11	PO12
CO1	1	-	-	-	1	-	-	-	1	-	1	-	1
CO2	-	-	-	-	-	-	-	-	1	1	1	-	1
CO3	1	-	-	-	-	-	-	-	1	1	1	-	1
CO4	1	-	-	-	-	-	1	-	1	1	1	-	1
CO5	1	-	-	-	-	1	1	-	1	1	1	-	1
WA	1	-	-	-	1	1	1	-	1	1	1	-	1

OE (4) Syllabus for BBA Semester - IV	
Course Code: 22OEBBA402	Course Title: Personal Wealth Management
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will;

CO1: Incorporate the importance of Wealth Management andFinancial Planning in personal life

CO2: Identify the Real Estate Investment Routes and understand the tax planning that minimizes tax burden

CO3: Select and Apply the Asset Allocation strategies to balance between Risk and Return

CO4: Analyze the Retirement Planning Benefits and retirement strategies s to provide regular income for life.

CO5: Evaluate the basic principles and importance of various insurance polices

Syllabus:	Hours
Module No. 1: Wealth Management and Financial Planning	**09**

Meaning of Wealth Management, Need, Scope and Components of Wealth Management, Process of Wealth Management, Expectations of Clients, Code of Ethics for Wealth Manager. Challenges to WM in India – Financial Planning - Systematic Approach to Investing (SIP, STP & SWP)- Life Cycle and Wealth Cycle - Financial Planning in India, Legal aspects of Financial Planning.

Module No. 2: Estate Planning and Tax Planning	**09**

Real Estate, Role of Real Estate, Real Estate Investment Routes, Real Estate Indices -Assets & Liabilities, Nomination, Inheritance Law, Will, Understanding Trust and Trust Documents – Tax Planning Concepts, Assessment Year, Financial Year, Income Tax Slabs, TDS, Advance Tax, LTCG, STCG, Carry Forward and Set-off.

Module No. 3: Asset Allocation Strategies	**09**

Asset allocation Strategies -Asset allocation Decision, Equity portfolio strategies - Active VsPassive, Management strategies, Value Vs growth investing, -Tactical, Fixed & Flexible. **Portfolio Management Strategies** - Indexing - Active - interest rate anticipation, Valuation analysis, Credit analysis, Yield spread analysis and Bond swaps - Allocation to Speculation, Diversification in Perspective.

Module No. 4: Retirement Planning and Employee Benefits	**10**
Introduction to Retirement Planning - Types of Retirement Plans - Defined Benefit and Defined Contribution plan, Superannuation Fund and other retirement plans, Pre andPost Retirement Planning Strategies – ESOP and ESPP.	
Module No. 5: Insurance Products in Wealth Management	**08**
Meaning, Basic Principles of Insurance, Functions and Characteristics of Insurance - Group Life and Health Insurance; Types of Life Insurance Policies, Types of General Insurance Policies, Health Insurance and Group Insurance Policy – Risk Management through Insurance.	
Skill Developments Activities: • **List out different Insurance schemes** • **Create your own personal portfolio using imaginary numbers and justify.** • **Conduct a survey of 20 salaried employees on their investment avenues through questionnaire.** • **Prepare technical charts report of any 5 listed stocks in BSE S&P SENSEX.**	
Text Books: • Pawan V. Jhabak – Wealth Management, Himalaya Publishing Hou Himalaya Publishing House Pvt. Ltd., Mumbai - 400 004. • S.K Bagchi – Wealth Management Jaico Publishing House, Firs Edition. • NSE Academy – Financial Planning and Wealth Management. • NCFM Work Book – Financial Markets (Advanced).	

Course Articulation Matrix – 22OEBBA402

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**1**
CO2	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**
CO3	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**
CO4	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**
CO5	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**
WA	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**1**

Guidelines for Continuous Internal Evaluation and Semester End Examination:

The CIE and SEE will carry 40% and 60% weightage each, to enable the course to be evaluated for a total of 100 marks, irrespective of its credits. The evaluation system of the course is comprehensive& continuous during the entire period of the Semester. For a course, the CIE and SEE evaluation will be on the following parameters:

Sl. No.	Parameters for the Evaluation	Marks
	Continuous Internal Evaluation(CIE)	
1	Continuous & Comprehensive Evaluation(CCE) – (A)	20Marks
2	Internal Assessment Tests(IAT) –(B)	20Marks
	Total of CIE(A+B)	40Marks
3	Semester End Examination(SEE) – (C)	60Marks
	Total of CIE and SEE(A+B+C)	100Marks

Continuous Internal Evaluation:

a. **Continuous & Comprehensive Evaluation (CCE):**

The CCE will carry a maximum of 20% weightage (20marks) of total marks of a course. Before the start of the academic session in each semester, a faculty member should choose for his/her course, minimum of four of the following assessment methods with 5 marks each (4x5=20 marks)

Individual Assignments

i. Seminars/Class Room Presentations/Quizzes
ii. Group Discussions/Class Discussion/Group Assignments
iii. Case studies/Caselets
iv. Participatory &Industry-Integrated Learning/Industrial visits
v. Practical activities/Problem Solving Exercises
vi. Participation in Seminars/Academic Events/Symposia, etc.
vii. Mini Projects/Cap stone Projects

b. **Internal Assessment Tests (IAT):** The IAT will carry a maximum of 20% weightage (20marks) of total marks of a course. Under this component, two tests will have to be conducted in a semester for 30 marks each and the same is to be scaled downto10 marks each.

PATTERN OF QUESTION PAPER

TIME: 2 HOURS

MARKS: 60

PART – A

Answer any FIVE of the following questions. Each question carries 2 marks. (5x2= 10)

1. ----------
2. ----------
3. ----------
4. ----------
5. ----------
6. ----------
7. ----------

PART – B

Answer any TWO of the following questions. Each question carries 10 Marks.

(2x10 =20)

8. ----------
9. ----------
10. ----------
11. ----------

PART – C

Answer any TWO of the following questions. Each question carries 15 Marks

(2X15=30)

12. ----------
13. ----------
14. ----------
15. ----------

SBRR Mahajana First Grade College (A)
Board of Studies-Business Administration 2021-22

Sl. No.	Name & Address	Designation	Signature
1	Smt. Shyla S Assistant Professor & HOD SBRR Mahajana First Grade College Mysore shylas.fgc@mahajana.edu.in 9845859475	Chairman	Shyla S 3/9/2022
2	Dr. Manjunath V Assistant Professor SBRR Mahajana First Grade College Mysore vmanjunath.joge@gmail.com 9900306941	Member	Manjunath 3/9
3	Dr.Anita B R Assistant Professor SBRR Mahajana First Grade College Mysore anitaprapti@gmail.com 9901114867	Member	Anita B.R 3/09/2022
4	Sri.Sunil N Assistant Professor SBRR Mahajana First Grade College Mysore 9900148051 sunil9284@gmail.com	Member	Sunil 3/9/22
5	Dr.Nirmala.N Assistant Professor SBRR Mahajana First Grade College Mysore nimalamysore223@gmail.com 7483907737	Member	Nirmala.N 3/9/2022
6	Dr. R. Mahesh Professor DoS in Business Administration, Manasagagothri, Mysuru mahesh@bims.uni-mysore.ac.in 9886639536	Member	03/09/22
7	Ms.Sunayana Assistant Professor & Head Department of Commerce and Management, Amritha Vishwa Vidyapeetham, Mysore sunayanadiger@gmail.com 9880980506	Member	Not Present
8	Ms. Prejna.N.Pai Assistant Professor Jain Deemed-to-be-university Bangalore prejna@gmail.com 9900212911	Member	Not Present

9	Sri.Lokesh V Managing Director & CEO Innomantra Consulting Pvt. Ltd. Bengaluru lokeshv@innomantra.com 9845272555	Member	Not Present
10	Sri.Rajesh R Chartered Accountant rajesh@bsra.in 9448229994	Member	R. Rajesh
11	Sri.Tejasvi Nathan Vice President - HR Swiss Re Global Business Solutions India Pvt Ltd, Bengaluru tejasvinathan@gmail.com 9900084170	Member	Not Present

Chairperson
BOS/BOE in Business Administration
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Mahajana Education Society (R.)
Education to Excel
SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)
Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF BUSINESS ADMINISTRATION

UG ☑

PG ☐

NEP Syllabi for V and VI Semester BBA 2023-24

DEPARTMENT OF BUSINESS ADMINISTRATION

Motto

TO CREATE BUSINESS LEADERS WITH
SOCIAL RESPONSIBILITY

Vision

To create and develop entrepreneurs who exhibit professionalism, accountability, transparency, human values and uphold Indian heritage in high esteem.

Mission

- Giving practical orientation to entrepreneurial ability.
- Giving professional exposure and building up leadership ability by organizing seminars, workshops, management fests and to make students participate in other similar activities.
- Make students to understand the importance of social responsibility in the corporate governance.
- Giving exposure on Indian ethos to future business leaders.

Programme outcomes for Business Administration

POs	Programme Outcomes (POs)
PO1	**Domain knowledge: Acquire** knowledge of management theories and practices with special focus on professional accounting and finance.
PO2	**Problem analysis:** Identify, formulate and analyze complex business problems in a structured approach to focus upon real issues.
PO3	**Design/development of solutions:** Developing solutions by using critical thinking and analytical reasoning with appropriate qualitative, quantitative techniques and software applications in solving business and research problems.
PO4	**Investigation and research:** Implementation of research methods to investigate specific business problems and draw conclusions.
PO5	**Use of modern techniques/tools**: Ability to analyze and interpret data using mathematical, statistical, ICT and risk management techniques to solve business problems.
PO6	**Business and Society**: Entrepreneurs/Managers with socio-economic value system.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and channelize inclination towards sustainable development.
PO8	**Moral and Ethical values**: Assimilate ethical, value based leadership skills and moral principles.
PO9	**Individual and Team work:** Ability to perform as an individual or leader in diverse settings.
PO10	**Communication and leadership skills:** Harness communication and leadership skills effectively to adapt to the growing business world.
PO11	**Project management and Finance:** Design methods and process; apply skills and knowledge to complete projects in accordance with project acceptance criteria and financial considerations.
PO12	**Lifelong Learning**: Evolve and improve as an individual by updating knowledge to enable oneself to thrive in social and professional life.

OBJECTIVES

1. To develop the skills required for the application of business concepts and techniques learnt in the classroom at the workplace.

2. To provide competent and technical skills personnel to the industry in the area of Marketing, Finance, Human Resource, Data Analytics, Retailing and Logistics and Supply Chain Management. To enhance the employability skills of the management students.

3. To enhance the capability of the students to improve their decision-making skills.

4. To encourage entrepreneurship among students pursuing education in the field of Business Administration.

5. To empower students for pursuing professional courses like MBA, Chartered Accountancy, Company Secretary, etc.,

6. To ensure holistic development of Business administration students

LIST OF BoS MEMBERS

Sl. No.	Category	Name Smt./Sri	Designation	Address for Communication	E-mail and Mobile No.
1	HoD & Chairman	Dr.Shyla S	Assistant Professor	SBRR Mahajana First Grade College, Mysore	shylas.fgc@mahajana.edu.in 9845859475
2	Faculty Members	1.Dr. Manjunath V	Assistant Professor	SBRR Mahajana First Grade College, Mysore	vmanjunath.joge@gmail.com 9900306941
		2. Dr.Anita B R	Assistant Professor	SBRR Mahajana First Grade College, Mysore	anitaprapti@gmail.com 9901114867
		3. Sunil.N	Assistant Professor	SBRR Mahajana First Grade College, Mysore	sunil9284@gamil.com 9900148051
		4. Dr. Nirmala.N	Assistant Professor	SBRR Mahajana First Grade College, Mysore	nirmalamysore223@gmail.com 7483907737
3	Two Experts from external university	1. Prejna.N. Pai	Assistant Professor	Jain Deemed-to-be-university Bangalore	prejna@gmail.com 9900212911
		2. Sunayana	Assistant Professor & HOD	Amritha school of Arts& Science, Mysore	sunayanadiger@gmail.com 9880980506
4	Nominee by the Vice Chancellor	Dr. R Mahesh	Associate Professor	DoS in Management BIMS, Manasa Gangothri, Mysore	mahesh@bims.uni-mysore.ac.in 9886639536
5	Two Person from Industry /Corporate Sector / Allied area	1. Rajesh R	Chartered Accountant	B S Ravi kumar & Associates Chartered Accountants, Mysore	rajesh@bsra.in 9448229994
		2. Lokesh V	Managing Director & CEO	Innomantra consulting Pvt. Ltd. Bangalore	lokeshv@innomantra.com 9845272555
6	Alumnus	Tejasvi Nathan	Vice President, HR	Swiss Re Global Business solutions India Pvt. Ltd., Bangalore	tejasvinathan@gmail.com 9900084170

SEMESTER–V

Course Type, Code and Name			Teaching Hours per Week (L:T:P)	C1	C2	C3	Exam Duration	Total Marks
DSC(15) 234529	Production and Operations Management	DSC	4:0:0	20	20	60	2½ hrs	100
DSC(16) 234530	Income Tax-I	DSC	4:0:0	20	20	60	2½ hrs	100
DSC(17) 234531	Banking Law and Practice	DSC	4:0:0	20	20	60	2½ hrs	100
DSE(1)	Elective 1- **Advanced Corporate Financial Management (FNI) (23DSEBBA01)** **Consumer Behavior (MK1) (23DSEBBA02)** Anyone to be chosen	DSE	3:0:0	20	20	60	2½ hrs	100
DSE(2)	Elective 2- **Compensation and Performance Management (HRM1) (23DSEBBA03)** **Fundamentals of Retail Management (RM1) (23DSEBBA04)**	DSE	3:0:0	20	20	60	2½ hrs	100
Vocational-1	Information Technology for Business (Excel &DBMS) **(23VOCBBA01)** Digital Marketing **(23VOCBBA02)**	Anyone to be chosen	3:0:0	20	20	60	2½ hrs	100
SEC(5) 23EMPBBA01	Employability Skills	SEC	2:0:1	30	20	50	2 hrs	100

ELECTIVE GROUPS AND COURSES:

Note: Students have to choose Two Electives in V Semester and Continue with the same Elective combinations in VI Semester.

SEMESTER – VI

Course Type, Code and Name			Teaching Hours per Week (L:T:P)	C1	C2	C3	Exam Duration	Total Marks
DSC(18) 234629	Business Law	DSC	4:0:0	20	20	60	2½ hrs	100
DSC(19) 234630	Income Tax-II	DSC	4:0:0	20	20	60	2½ hrs	100
DSC(20) 234631	International Business	DSC	4:0:0	20	20	60	2½ hrs	100
DSE(3)	Elective 1 –**Security analysis & portfolio Management (FN2) (23DSEBBA05) Advertising and Media Management. (MK2) (23DSEBBA06)**	DSE	3:0:0	20	20	60	2½ hrs	100
DSE(4)	Elective 2- **Human Resources Development (HRM2) (23DSEBBA07)** **Retail Operations Management (RM2) (23DSEBBA08)**	DSE	3:0:0	20	20	60	2½ hrs	100
Vocational-2	Goods and Services Tax **(23VOCBBA03)** ERP Application **(23VOCBBA04)**	Anyone to be chosen	3:0:0	20	20	60	2½ hrs	100
23INTBBA01	Internship		3:0:0	50	50			100

DSC (15) Syllabus for BBA
Semester - V

Course Code: 234529	Course Title: **Production and Operations Management**
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:60	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the students' will be able to

a) Gain knowledge on the ever growing importance of Production and Operations Management in uncertain business environment.
b) Illustrate the different aspects of Plant Location and Layout
c) Analyze the process of Production Planning and Control.
d) Comprehend the unique challenges faced by firms in Inventory Management
e) Develop skills to operate competitively in the current business scenario.

Syllabus:	**Hours**
Module No.1: Introduction to Production and Operations Management	**12**
Introduction -Meaning of Production and Operations, differences between Production and Operations Management, Scope of Production Management, Production System. Types of Production, Benefits of Production Management, Responsibility of a Production Manager, Decisions of Production Management. Operations management: Concept and Functions	
Module No. 2: Plant Location and layout	**12**
Meaning and definition –Factors affecting location, Theory and practices, cost Factor in location – Plant layout Principles – Space requirement – Different types of facilities – Organization of physical facilities – Building, Sanitation, Lighting, Air Conditioning and Safety.	
Module No.3: **Production Planning and Control**	**12**
Meaning and Definition-Characteristics of Production Planning and Control, Objectives of Production Planning and Control, Stages of Production Planning and Control, Scope of Production Planning & Control, Factors Affecting Production Planning and Control, Production Planning System, Process Planning Manufacturing, Planning and Control System, Role of Production Planning and Control in Manufacturing Industry.	
Module No. 4: Inventory Management	**12**
Inventory Management – Concepts, Classification: Objectives: Factors Affecting Inventory Control Policy. Inventory costs: Basic EOQ Model: Re-order Level: ABC Analysis. Quality Management - Quality Concepts, Difference between Inspections, Quality Control, Quality Assurances, Total Quality Management: Control Charts: acceptance sampling.	
Module 5: Maintenance and Waste Management	**12**

Introduction – Meaning – Objectives – Types of maintenance, Breakdown, Spares planning and control, Preventive routine, Relative Advantages, Maintenance Scheduling, Equipment reliability and Modern Scientific Maintenance Methods - Waste Management–Scrap and surplus disposal, Salvage and recovery.

Skill Development Activities:

1. Visit any industry and list out the stages of its automation and artificial intelligence with as many details as possible.
2. List out the factors which are important while selecting a plant layout and draw a chart on Plant layout
3. Describe the Functions of Quality Circles in an industry
4. List out the Functions of Inventory Management in an organization.

Books for Reference:

1. Ashwathappa. K & Sridhar Bhatt: Production & Operations Management, HPH.
2. Gondhalekar & Salunkhe: Productivity Techniques, HPH.
3. SN Chary, Production & Operations Management, McGraw Hill.
4 U. Kachru, Production & Operations Management, Excel Books.
5. Alan Muhlemann, John Oaclank and Keith Lockyn, Production & Operations Management, PHI.
6 K KAhuja, Production Management, CBS Publishers.
7. S.A. Chunawalla & Patel: Production & Operations Management, HPH.

https://www.vssut.ac.in
https://ddceutkal.ac.in
https://www.ascdegreecollege.ac.iN

Course Articulation Matrix - 234529

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	2	1	2	1	1	1	1	1	2
CO2	2	1	2	1	1	2	2	1	1	1	1	2
CO3	1	2	2	1	2	1	1	2	1	2	1	2
CO4	2	1	2	2	1	1	1	1	2	1	2	2
CO5	1	2	2	1	2	1	2	1	1	2	1	2
WA	**1.4**	**1.6**	**2**	**1.4**	**1.4**	**1.4**	**1.4**	**1.2**	**1.2**	**1.4**	**1.2**	**2**

DSC (16) Syllabus for BBA Semester - V	
Course Code: 234530	Course Title: **Income Tax – I**
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:60	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies &field work etc..

Course Outcomes: On successful completion of the course, the students will be able to:

a) Gain knowledge on the computation of Total Income and tax liability of an individual.
b) Evaluate the provisions for determining the residential status of an Individual.
c) Comprehend the meaning of Salary, Perquisites, Profit in lieu of salary, allowances and various retirement benefits.
d) Compute the income house property for different categories of house property.
e) Comprehend TDS & advances tax Ruling and identify the various deductions under section 80.

Syllabus:	**Hours**
Module-1: Basic Concepts of Income Tax	**10**
Introduction –Meaning of tax-, types of taxes, cannons of taxation. Brief history of Indian Income Tax, legal framework of taxation, Important definitions, assessment, assessment year, previous year including exceptions, assesses, person, income, casual income, Gross total income, Total income, Agricultural income, scheme of taxation, – Exempted incomes of an individual under section 10.	
Module -2:Residential Status and Incidence of Tax	**10**
Introduction – Residential status of an individual. Determination of residential status of an individual. Incidence of tax or Scope of Total income. Problems on computation of Gross total Income of an individual.	
Module- 3: Income from Salary	**15**
Introduction - Meaning of Salary -Basis of charge Definitions–Salary, Perquisites and profits in lieu of salary - Provident Fund –Transferred balance. - Retirement Benefits – Gratuity, pension and Leave salary. Deductions and Problems on Computation of Taxable Salary.	
Module -4: Income from House Property	**15**
Introduction - Basis for charge - Deemed owners -House property incomes exempt from tax, composite rent and unrealized rent. Annual Value –Determination of Annual Value - Deductions from Annual Value - Problems on Computation of Income from House Property.	

Module No.-5: Tax Deduction at Sources & Advance Tax Ruling	10
Introduction - Meaning of TDS - Provisions regarding TDS - TDS to be made from Salaries - Filing of Quarterly statement – Theory and Problems; Advance Tax: Meaning of advance tax - Computation of advance tax - Instalment of advance tax and due dates. **Deductions** under Section 80C, 80CCC, 80CCD, 80CCG, 80D, 80DD, 80DDB, 80E, 80G, 80GG, 80TTA and 80U as applicable to individuals under old regime. (Individuals only).	

Skill Development Activities:

1. Prepare a slab rates chart for different Individual assesses.
2. Visit any Chartered Accountant Office Collect and record the procedureinvolved in filing the Income tax returns of an Individual.
3. List out any 10 Incomes exempt from tax of an Individual.
4. Prepare the list of perquisites received by an employee in an organization.
5. Identify and collect various enclosures pertaining to Income tax returns of an individual.
6. Any other activities, which are relevant to the course.

Books for References:

1. Mehrotra H.C and T.S.Goyal, Direct taxes, Sahithya Bhavan Publication, Agra.
2. Vinod K. Singhania, Direct Taxes, Taxman Publication Private Ltd, New Delhi.
3. Gaur and Narang, Law and practice of Income Tax, Kalyani Publications, Ludhiana.
4. Bhagawathi Prasad, Direct Taxes.
5. B.Mariyappa, Income tax Law and Practice-I, Himalaya Publishing House.
6. Dr. R G Saha, Dr Ushabdevi N: Income Tax I

Note: Latest edition of text books may be used.

https://cleartax.in
https://www.bankbazaar.com
https://taxguru.in

Course Articulation Matrix - 234530

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	1	2	2	1	2	2	1	2	2	1	2	2
CO2	1	1	2	1	2	2	1	2	2	1	2	2
CO3	1	2	2	1	2	2	1	2	2	1	2	2
CO4	1	1	2	1	2	2	1	2	2	1	2	2
CO5	1	2	2	1	2	2	1	2	2	1	2	2
WA	**1**	**1.6**	**2**	**1**	**2**	**2**	**1**	**2**	**2**	**1**	**2**	**2**

DSC (17) Syllabus for BBA Semester - V	
Course Code: 234531	Course Title: **Banking Law and Practice**
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours: 60	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Casestudies & field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to:

a) Understand the legal aspects of banker and customer relationship.
b) Open the different types of accounts.
c) Describe the various operations of banks.
d) Understand the different types of crossing of cheques and endorsement.
e) Understanding of different types of E-payments.

Syllabus:	**Hours**
Module No. 1: Banker and Customer	**16**
A) Banker and Customer Relationship: Introduction – Meaning of Banker& Customer; General and Special relationships between Banker & Customer, (Rights and Obligations of Banker & Customer). B) Customers and Account Holders: Types of Customer and Account Holders – Procedure and Practice in opening and operating the accounts of different types of customers – Minor, Joint Account Holders, Partnership Firms, Joint Stock Companies, Clubs, Non-Resident Account – NRI & NRE Accounts.	
Module No. 2: Banking Operations.	**08**
Meaning – Duties and Responsibilities of Collecting Banker, Holder for Value, Holder inDue Course; Statutory Protection to Collecting Banker.	
Module No. 3: Paying Banker	**12**
Meaning – Precautions – Statutory Protection to the Paying Banker; Cheques – Crossingof Cheques – Types of Crossing; Endorsements - Meaning, Essentials and Kinds of Endorsement; Dishonor of Cheque - Grounds for Dishonor of cheque.	
Module No. 4: Lending Operations	**12**
Principles of Bank Lending, Kinds of lending - Loans, Cash Credit, Overdraft, Bills Discounting, Letters of Credit. Types of securities and Methods of creation of charge, Secured and Unsecured Advances; Procedure - Housing, Education and Vehicle loan's; Non-Performing Asset (NPA): Meaning, circumstances & impact; Government Regulations on Priority lending for commercial banks.	

Module No. 5: Banking Innovations	**12**
New technology in Banking – E-services – plastic cards . Internet Banking, ATM based services, ECS, MICR, RTGS, NEFT, DEMAT, IMPS UPI , AADHAR enabled payment system, USSD, E-Valet and application based payment systems, Role of artificial intelligence in banks, Block Chain – Meaning and features.	

Skill Development Activities:

1. Collect and paste pay in slip for SB A/c and Current a/c.
2. Draw a specimen of a crossed cheque.
3. List out different types of customers and collect KYC documents required for loan
4. List out various fee-based services offered by a bank in your locality
5. List out application-based payment systems provided by a commercial bank.

Books for References:

1. Gordon & Natarajan: Banking Theory Law and Practice, HPH.
2. Maheshwari. S.N.: Banking Law and Practice, Vikas Publication.
3. Kothari N. M: Law and Practice of Banking.
4. Tannan M.L: Banking Law and Practice in India, Indian Law House

Note: Latest edition of Reference Books may be used

https://www.icsi.edu

https://www.indiacode.nic.in

https://unacademy.com

Course Articulation Matrix - 234531

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	1	1	2	1	1	2
CO2	2	1	1	1	1	1	1	1	2	1	1	2
CO3	2	1	1	1	1	1	1	1	2	2	1	2
CO4	1	1	1	1	1	1	1	1	2	2	1	1
CO5	1	1	1	1	1	1	1	1	1	1	1	1
WA	**1.8**	**1**	**1**	**1**	**1**	**1.2**	**1**	**1**	**1.8**	**1.4**	**1**	**1.6**

DSE (1) Syllabus for BBA Semester – V FN-1	
Course Code: 234532	Course Title: **Advanced Corporate Financial Management**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to:

a) Illustrate and determine the overall cost of capital and evaluate capital structure
b) Comprehend the different advanced capital budgeting techniques.
c) Analyze the importance of dividend decisions and dividend theories.
d) Evaluate mergers and acquisition.
e) Acquire knowledge on ethical and governance issues in financial management.

Syllabus:	**Hours**
Module No. 1: Cost of Capital and Capital Structure Theories	**10**
Cost of Capital: Meaning and Definition – Significance of Cost of Capital – Types of Capital –Computation of Cost of Capital – Specific Cost – Cost of Debt – Cost of Preference Share Capital – Cost of Equity Share Capital – Weighted Average Cost of Capital – Problems. **Theories of capital structures**: The Net Income Approach, The Net Operating Income Approach,Traditional Approach and MM Hypothesis – Problems.	
Module No. 2: Risk Analysis in Capital Budgeting	**10**
Risk Analysis – Types of Risks – Risk and Uncertainty – Techniques of Measuring Risks – Riskadjusted Discount Rate Approach – Certainty Equivalent Approach – Sensitivity Analysis - Probability Approach - Standard Deviation and Co-efficient of Variation – Decision Tree Analysis – Problems. .	
Module No. 3: Dividend Decision & Theories of Dividend.	**10**
Introduction - Dividend Decisions: Meaning - Types of Dividends – Types of Dividends Polices – Significance of Stable Dividend Policy - Determinants of Dividend Policy; Dividend Theories: Theories of Relevance – Walter's Model and Gordon's Model and Theory of Irrelevance – The Miller-Modigliani (MM) Hypothesis - Problems.	
Module No. 4: Mergers and Acquisitions	**10**
Meaning - Reasons – Types of Combinations - Types of Merger – Motives and Benefits of Merger – Financial Evaluation of a Merger - Merger Negotiations – Leverage buyout, Management Buyout Meaning and Significance of P/E Ratio. Problems on Exchange Ratios based on Assets Approach, Earnings Approach and Market Value Approach and Impact of Merger on EPS, Market Price and Market capitalization.	
Module No. 5: Ethical and Governance Issues	**5**
Introduction to Ethical and Governance Issues: Fundamental Principles, Ethical Issues in Financial Management, Agency Relationship, Transaction Cost Theory, Governance Structures and Policies, Social and Environmental Issues, Purpose and Content of an Integrated Report.	

Skill Development Activities:

1. Visit an organisation in your town and collect data about the financial objectives.
2. Compute the specific cost and Weighted average cost of capital of an Organisation, you have visited.
3. Case analysis of some live merger reported in business magazines.
4. Meet the financial manager of any company, discuss ethical issues in financial management.
5. Collect the data relating to dividend policies practices by any two companies.
6. Any other activities, which are relevant to the course.

Books for References:

1. I M Pandey, Financial management, Vikas publications, New Delhi.
2. Abrish Guptha, Financial management, Pearson.
3. Khan & Jain, Basic Financial Management, TMH, New Delhi.
4. S N Maheshwari, Principles of Financial Management, Sulthan Chand & Sons, New Delhi.
5. Chandra & Chandra D Bose, Fundamentals of Financial Management, PHI, New Delhi.

Note: Latest edition of Reference Books may be used

https://www.managementstudyguide.com
https://www.investopedia.com
https://cleartax.in

Course Articulation Matrix - 234532

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	2	1	1	1	2	1	2	2
CO2	3	2	2	1	2	1	1	1	2	1	2	2
CO3	3	2	2	1	2	1	1	1	2	1	2	2
CO4	3	2	2	1	2	1	1	1	2	1	2	2
CO5	3	1	1	1	2	2	2	2	2	2	2	2
WA	**3**	**1.8**	**1.8**	**1**	**2**	**1.2**	**1.2**	**1.2**	**2**	**1.2**	**2**	**2**

DSE (2) Syllabus for BBA Semester – V MK-1	
Course Code: 234533	Course Title: **Consumer Behaviour**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies &field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to:

a) Understanding of Consumer Behaviour towards products, brands andservices.
b) Distinguish between different consumer behaviour influences andtheir relationships.
c) Establish the relevance of consumer behaviour theories and conceptsto marketing decisions.
d) Implement appropriate combinations of theories and concepts.
e) Recognise social and ethical implications of marketing actions onconsumer behaviour.

Syllabus:	**Hours**
Module -1: Introduction to Consumer Behaviour	**10**
Meaning and Definition, Need for Consumer Behaviour, consumer and customer. Buyers and users. Need to study consumer behaviour. Applications in Marketing, Consumer research process –Understanding consumer through Research process. Factors influencing Consumer Behaviour. External factors – Culture, Sub Culture, Social Class, Reference Groups, Family, Internal factors– Needs & Motivations, Perception, Personality, Lifestyle, Values, Learning, Memory, Beliefs & Attitudes.	
Module -2: Individual Determinants of Consumer Behaviour	**08**
Consumer Needs & Motivation; Personality and Self-Concept; Consumer Perception; Learning & Memory; Nature of Consumer Attitudes – Psychological: Motivation, Perceptions, Learning, Belief and Attitudes. Consumer Attitude,Formation and Change.	
Module-3: Environmental Determinants of Consumer Behaviour	**12**
Family Influences; Influence of Culture; Subculture & Cross-Cultural Influences; Group Dynamics and Consumer Reference Groups; Social Class: Family role. Person's Age, Life cycle stage, Occupational and economic circumstances.	
Module - 4: Consumer's Decision-Making Process	**09**
Opinion leadership, dynamics of opinion leadership process, The Motivationbehind opinion leadership- The Diffusion Process-The adoption process- levels of consumer decision making- Models of consumer decision making.	

Module -5:Consumer Satisfaction & Consumerism	**06**
Concept of Consumer Satisfaction; Working towards enhancing Consumer Satisfaction; Sources of Consumer Dissatisfaction; Dealing with Consumer Complaint. Concept of Consumerism; Consumerism in India; Reasons for Growth of Consumerism in India.	
Skill Development Activities: 1. Collect information on behaviour of consumers at an unorganized retail Outlets. 2. prepare a questionnaire to conduct consumer survey to assets the important factor motivates their purchase like mobile, shoes, bags,etc 3. Collect and record feedback on customer satisfaction online shoeing 4. Write a report on the marketing problem faced by an organization of your choice. 5. Visit any three local restaurants and assess how each attracts clients in different stages of the family life cycle.	
Books for References: 1. Leon. G. Schiffman & Leslve Lazer Kanuk; Consumer behaviour; 6th Edition; PHI, New Delhi, 2000. 2. Suja.R.Nair, Consumer behaviour in Indian perspective, First Edition, Himalaya Publishing House, Mumbai, 2003. 3. Batra/Kazmi; Consumer Behaviour. 4. David. L. Loudon & Albert J. Bitta; Consumer Behaviour; 4th Edition, Mcgraw Hill, Inc; New Delhi,1993. 5. K. Venkatramana, Consumer Behaviour, SHBP. 6. Assael Henry; Consumer behaviour and marketing action; Asian Books(P) Ltd, Thomson learning, 6th Edition; 2001. https://www.sciencedirect.com https://hbr.org https://study.com	

Course Articulation Matrix - 234533

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	2	2	1	2	2	2	2	2
CO2	3	2	1	2	1	1	-	2	2	2	1	2
CO3	2	1	1	1	1	1	1	2	2	2	1	2
CO4	2	1	1	1	1	1	1	2	2	2	-	2
CO5	2	1	1	2	2	1	1	2	2	2	1	2
WA	**2.4**	**1.4**	**1.2**	**1.6**	**1.4**	**1.2**	**1**	**2**	**2**	**2**	**1**	**2**

DSE (1) Syllabus for BBA
Semester – V HRM-1

Course Code: 234534	Course Title: **Compensation And Performance Management**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to:

a) Understand the concepts of Compensation management.
b) Describe job evaluation and its methods.
c) Evaluate the different methods of wages.
d) Describe performance management and methods of performance management.
e) Acquire the knowledge on the Preparation of Payroll.

SYLLABUS:	**HOURS**
Module No. 1: Introduction to Compensation Management	**11**

Compensation - Definition - Classification - Types - Wages, Salary, Benefits, DA, Consolidated Pay; Equity based programs, Commission, Reward, Remuneration, Bonus, Short term and Long term Incentives, Social Security, Retirement Plan, Pension Plans, Profit Sharing Plan, Stock Bonus Plan, ESOP ,Employer Benefits and Employer Costs for ESOP, Individual Retirement Account, Savings Incentive Match Plan for Employees.

Compensation Management- Compensation and Non-Compensation Dimensions, 3-P Concept in Compensation Management, Compensation as Retention Strategy, Compensation Issues, Compensation Management in Multi-National organizations Compensation Strategy: Organizational and External Factors Affecting Compensation Strategies, Compensation Strategies as an Integral Part of HRM, Compensation Policies.

Module No. 2: Job Evaluation	**06**

Definition of Job Evaluation, Major Decisions in Job Evaluation, Job Evaluation Methods, Point Factor Method of Job Evaluation: Combining Point factor and Factor Comparison Methods, Job Evaluation Committee, Factor Evaluation System (FES), Using FES to determine Job Worth, Position Evaluation Statements.

Module No. 3: Wage and Salary Administration	**08**

Theories of Wages - Wage Structure - Wage Fixation - Wage Payment - Salary Administration. Difference between Salary and Wages - Basis for Compensation Fixation- Components of Wages - Basic Wages - Overtime Wages - Dearness Allowance - Basis for calculation - Time Rate Wages and Efficiency Based Wages - Incentive Schemes - Individual Bonus Schemes, Group Bonus Schemes - Effect of various Labour Laws on Wages-Preparation of Pay Roll

Module No. 4: Performance Management	12

Evolution of Performance Management, Definitions of Performance Management, Importance of Performance Management, Aims and Purpose of Performance Management, Employee Engagement and Performance Management, Principles and Dimensions of Performance Management Performance Appraisal Methods: Traditional Methods, Modern Methods, Performance Appraisal Feedback: Role, Types and Principles, Levels of Performance Feedback, 360-Degree Appraisal, Ethics in Performance Appraisal.

Module No. 5: Issues In Performance Management	08

Team Performance Management, Performance Management and Learning Organizations, Performance Management and Virtual Teams, Role of Line Managers in Performance Management, Performance Management and Reward, Linking Performance to Pay –A Simple System Using Pay Band, Linking Performance to Total Reward, Challenges of Linking Performance and Reward.

Skill Development Activities:

1. List the various components of total compensation in Multinational Companies.
2. Construct a questionnaire for a salary survey on nurses.
3. Design a performance appraisal plan using any Modern Performance Appraisal Tool for an IT company.
4. Study any one contemporary practice of Performance Management System (Balance scorecard, Lean Management, BPRE, Six Sigma and so on)

Books for References:

1. Joseph J. Martocchio, Strategic Compensation, 3rd Edition, Pearson Education
2. Michael Armstrong & Helen Murlis: Hand Book of Reward Management – Crust Publishing House.
3. Milkovich & Newman, Compensation, Tata McGraw Hill
4. Richard I. Anderson , Compensation Management in Knowledge based world, 10th edition, Pearson Education
5. Thomas. P. Plannery, David. A. Hofrichter & Paul. E. Platten: People, Performance & Pay – Free Press.
6. Aguinis Herman, Performance Management, 2nd Edition, 2009 Pearson Education, New Delhi.
7. Aziz A, Performance Appraisal: Accounting and Quantitative Approaches, 1993, Pointer.
8. Bhatia S.K, Performance Management: Concepts, Practices and Strategies for Organisation Success, 2007, Deep & Deep, New Delhi.
9. BD Singh, Compensation & Reward Management, Excel Books

https://www.tutorialsduniya.com
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https://ecampusontario.pressbooks.pub

Course Articulation Matrix - 234534

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	2	2	1	2	2	2	3	2
CO2	2	2	2	2	2	2	1	2	2	2	2	2
CO3	2	2	2	2	2	1	1	1	2	1	2	2
CO4	2	1	2	2	2	2	2	2	2	2	2	2
CO5	2	2	1	1	1	1	1	1	1	1	1	1
WA	**2**	**1.8**	**1.8**	**1.6**	**1.8**	**1.6**	**1.2**	**1.6**	**1.8**	**1.6**	**2**	**1.8**

DSE (2) Syllabus for BBA
Semester – V RM-1

Course Code: 234535	Course Title: **Fundamentals of Retail Management**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, Case studies, Group discussion, Seminar &field work etc.,

Course Outcomes: On successful completion student will demonstrate:

a) Acquire knowledge about Retail Business.
b) Evaluate the business operations in Retailing.
c) Formulate the retail strategies of Retail Business.
d) Apply the Retailing principles and theories.
e) Explore the career opportunities in the Retail sector.

Syllabus:	**Hours**
Module -1: Introduction to Retail Business	**10**

Definition, functions and types of retail Ownership-Independent Retailer, Chain Stores, Franchising, Leased departmental stores, Vertical Marketing system, Consumer co-operatives; forms of retail business ownership. Indian Retail Scenario- Factors influencing retail business in India; Ethical Issues in Retailing;International perspective in retail business- FDI in Indian Organized Retail Sector.

Module -2: Consumer Behaviour in Retail Business	**08**

Buying decision process and its implication on retailing –Customer shopping Behavior, Customer service and customer satisfaction. Retail planning process: Factors to consider in preparing a business plan – implementation – risk analysis.

Module-. 3: Retail Organization and Functional Management	**08**

Business Models in Retailing, Classification of Retailing Formats, Operational Stages in Retailing, Factors influencing Location of stores, Stores Designing, Space planning, Inventory Management, Merchandising Management, Selection and optimization of Workforce. Retail Accounting and Cash Management.

Module -4: Retail Marketing Mix	**12**
Introduction -Product: Decisions related to selection of goods (Merchandise Management) Product Assortment and display, new product launch, PLC inRetailing; Pricing- Influencing factors – approaches to pricing – price sensitivity - Value pricing – Markdown pricing. Place: Supply channel, Retail logistics, computerized replenishment system, corporate replenishment Policies. Promotion : Setting objectives, communication effects , promotional mix.; Retail distribution-In Store and Online Store, Factors influencing retail distribution; Human ResourceManagement in Retailing- Selection and Optimization of work force.	
Module- 5: Impact of Information Technology in Retailing	**07**
Non store retailing (e-retailing) - The impact of Information Technology inretailing - Integrated systems and networking – EDI – Bar coding – Electronic article surveillance – Electronic shelf labels – customer database management system. Legal aspects in retailing, Social issues in retailing, Ethical issues in retailing.	
Skill Development Activities: a) Draw a retail life cycle chart and list the stages. b) Draw a chart showing store operations. c) List out the major functions of a store manager diagrammatically. d) List out the current trends in e-retailing List out the Factors Influencing in the location of a New Retail outlet.	
Books for References: 1. Suja Nair; Retail Management,HPH 2. Karthic – Retail Management, HPH 3. S.K. Poddar& others – Retail Management, HPH. 4. R.S.Tiwari ; Retail Management, HPH 18 5. Barry Bermans and Joel Evans: "Retail Management – A Strategic Approach", 8th edition, PHI/02 6. A.J.Lamba, "The Art of Retailing", 1st edition, Tata McGrawHill, Newdelhi, 2003. https://sim.edu.in https://ebooks.lpude.in https://oms.bdu.ac.in	

Course Articulation Matrix - 234535

	PO1	PO2	P03	P04	P05	P06	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	2	1	2	1	2	1	2	2	2
CO2	2	2	1	1	2	2	1	1	1	2	2	2
CO3	2	3	2	1	1	2	2	1	1	2	2	2
CO4	2	3	2	1	1	2	2	1	2	2	1	2
CO5	2	3	2	1	1	2	1	1	1	2	1	2
WA	**2**	**2.4**	**1.6**	**1.2**	**1.2**	**2**	**1.4**	**1.2**	**1.2**	**2**	**1.6**	**2**

VOCATIONAL-1 Syllabus for BBA
Semester - V

Course Code: 234536	Course Title: **Information Technology For Business**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom's lecture, tutorials, Group discussion, Seminar, Case studies.

Course Outcomes: On successful completion Student will demonstrate;

a) Acquire the knowledge about the fundamentals of information technology
b) Apply the usage of information technology in business.
c) Learn core concepts of computing and modern systems
d) Applications of Excel and SQL.
e) Awareness about latest information.

Syllabus	**Hours**
Module No. 1: Information Technology and Information System	**10**
Introduction to IT, Introduction to IS, Difference be IS and IT, Need for Information System, Information Systems in the Enterprise, Impact of Information Technology on Business (Business Data Processing, Intra and Inter Organizational communication using network technology, Business process and Knowledge process outsourcing), Managers and Activities in IS, Importance of Information systems in decision making and strategy building, Information systems and subsystems.	
Module No. 2: Subsystems of Information System	**10**
Transaction Processing Systems (TPS), Management Information System (MIS), Decision Support Systems (DSS), Group Decision Support System (GDSS), Executive Information System (EIS), Expert System (ES), Features, Process, advantages and Disadvantages, Role of these systems in Decision making process.	
Module No. 3: Database Management System	**10**
Introduction to Data and Information, Database, Types of Database models, Introduction to DBMS, Difference between file management systems and DBMS, Advantages and Disadvantages of DBMS, Data warehousing, Data mining, Application of DBMS, Introduction to MS Access, Create Database, Create Table, Adding Data, Forms in MS Access, Reports in MS Access.	
Module No. 4: Microsoft Excel in Business	**10**

Introduction to MS Excel, features of MS Excel, Cell reference, Format cells, Data Validation, Protecting Sheets, Data Analysis in Excel: Sort, Filter, Conditional Formatting, Preparing Charts, Pivot Table, what if Analysis (Goal Seek, Scenario manager), Financial Functions: NPV, PMT, PV,FV, Rate, IRR, DB,SLN,SYD. **Logical Functions**: IF, AND, OR, Lookup Functions: V Lookup, H Lookup, Mathematical Functions, and Text Functions.

Module No. 5: Recent Trends in IT	**05**

Virtualization, Cloud computing, Grid Computing, Internet of Things, Green Marketing, Artificial Intelligence, Machine Learning.

Skill Developments Activities:

1. Creating Database Tables in MS Access and Entering Data
2. Creating Forms in MS Access
3. Creating Reports in MS Access
4. Creating charts in Excel
5. What if analysis in Excel
6. Summarizing data using Pivot Table
7. VLookup and HLookup Functions
8. Rate of Interest Calculation using Financial Function
9. EMI calculation using Financial Function
10. Data Validation in Excel
11. Sort and Filter
12. Conditional Formatting in Excel.

Books for Reference:

1. Lauaon Kenneth & Landon Jane, "Management Information Systems: Managing the Digital firm", Eighth edition, PHI, 2004.
2. Uma G. Gupta, "Management Information Systems – A Management Prespective", Galgotia publications Pvt., Ltd., 1998.
3. Louis Rosenfel and Peter Morville, "Information Architecture for the World wide Web", O'Reilly Associates, 2002.
4. C.S.V.Murthy: Management Information Systems, HPH
5. Steven Alter, "Information Systems – A Management Perspective", Pearson Education, 2001.
6. Uma Gupta, "Information Systems – Success in 21st Century", Prentice Hall of India, 2000.
7. Robert G. Murdick, Joel E. Ross and James R. Claggett, "Information Systems for Modern Management", PHI, 1994.
8. Introduction to Database Systems, CJ Date, Pearson
9. Database Management Systems, Raghurama Krishnan, Johannes Gehrke, TATA McGraw Hill 3rd Edition.
10. The Database Systems – The Complete Book, H G Molina, J D Ullman, J Widom Pearson
11. Database Systems design, Implementation, and Management, Peter Rob & Carlos Coronel 7th Edition.
12. Fundamentals of Database Systems, Elmasri Navrate Pearson Education

https://smallbusiness.chron.com
https://www.aeologic.com
https://www.infomentum.com

Course Articulation Matrix -234536

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	1	2	2	1	2	1	1	1	1	1	1	2
CO2	1	2	2	2	2	1	1	1	1	1	2	2
CO3	1	2	2	2	2	1	1	1	1	1	2	2
CO4	1	2	3	2	2	1	1	1	1	1	1	1
CO5	1	1	2	2	2	1	1	1	1	1	1	2
WA	**1**	**1.8**	**2.2**	**1.8**	**2**	**1**	**1**	**1**	**1**	**1**	**1.4**	**1.8**

VOCATIONAL-1 Syllabus for BBA Semester - V	
Course Code: 234537	Course Title: **Digital Marketing**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to

a) Acquire knowledge on Digital Marketing and strategies.
b) Comprehend the concepts of Email marketing and Content marketing.
c) Awareness about Social Media Marketing and Web Analytics.
d) Learn YouTube Advertising & Conversions.

Syllabus:	**Hours**
Module No. 1: Introduction to Digital Marketing	**10**
Introduction, Overview of digital marketing, Evolution of digital marketing, Importance and benefits of digital marketing, Digital marketing channels and platforms. Digital Marketing Strategy and Planning: Developing a digital marketing strategy, Setting goals and objectives, Budgeting and resource allocation. Campaign planning and execution, Monitoring and adjusting digital marketing campaigns.	
Module No. 2: Email and Content Marketing:	**10**
Introduction to email marketing, building an email list, Creating effective email campaigns, Email automation and segmentation, Email marketing metrics and analytics. Content Marketing: Understanding content marketing, Content strategy and planning, Content creation and distribution, Content promotion and amplification, Content marketing metrics and analytics.	
Module No. 3: Social Media Marketing (SMM)	**10**

Social Media Marketing: Overview of social media marketing, Social media platforms and their features, Creating and optimizing social media profiles, Social media content strategy, Social media advertising and analytics. Mobile Marketing: Mobile marketing overview, Mobile advertising strategies, Mobile app marketing, Location-based marketing, Mobile marketing analytics.

Module No. 4: Web Analytics	**5**

Analytics and Reporting: Importance of analytics in digital marketing, Setting up web analytics tools (e.g., Google Analytics), Tracking and measuring key performance indicators (KPIs), Conversion tracking and optimization, Reporting and data visualization

Module No. 5: YouTube Advertising (Video Ads) and conversion	**10**

YouTube Advertising (Video Ads): YouTube advertising, its usages, Creating YouTube campaigns Choose the audience for video ads, Instream ads, In video ads, In-search ads, In-display ads, Measuring your YouTube ad performance. Conversions: Understanding Conversion Tracking, Types of Conversions, Setting up Conversion Tracking, Optimizing Conversions, Track offline conversions Analyzing conversion data, Conversion optimizer.

Skill Development Activities:

1. Explain the key digital marketing activities needed for competitive success.
2. Examine the concept of Digital Media and benefits to be derived.
3. Recognise the core features of CRM and retention programmes
4. Identify the metrics used in digital marketing.
5. Organise how we can limit the marketing materials we get through e-mail.

Books for Reference:

1. Understanding DIGITAL Marketing, Marketing strategies for engaging the digital generation Damian Ryan & Calvin Jones
2. The Art of Digital Marketing: The Definitive Guide to Creating Strategic By Ian Dodson
3. Internet Marketing: a practical approach By Alan Charlesworth
4. Social Media Marketing: A Strategic Approach By Melissa Barker, Donald I. Barker, Nicholas F. Bormann, Krista E Neher
5. "Mobile Marketing: How Mobile Technology is Revolutionizing Marketing, Communications and Advertising" by Daniel Rowles

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https://collegetutor.net

Course Articulation Matrix - 234537

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	2	3	1	1	1	2	2	2	2
CO2	2	1	2	2	2	1	2	1	1	1	1	1
CO3	1	1	1	1	2	2	1	2	2	2	1	2
CO4	1	1	1	2	1	1	1	1	1	2	2	2
WA	**1.5**	**1**	**1.5**	**1.75**	**2**	**1.25**	**1.25**	**1**	**1.5**	**1.75**	**1.5**	**1.75**

SEC- Syllabus for BBA
Semester - V

CourseCode: 23EMPBBA01	Course Title: **Employability Skills**
Course Credit (L:T:P): 3(2:0:1)	Teaching Hours/Week:3
Total Contact Hours: 45	Formative Assessment Marks:40
Duration of Exam: 2 1/2 Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students' will be able to

a) Acquire information on various vacancies notified by Central and State Government authorities as well as Private organizations.
b) Evaluate the problems on quantitative aptitude, logical reasoning and analytical ability.
c) Application of basic computer skills like MS word, MS excel, MS PPTs. Email etiquettes Etc.,
d) Articulate communication and leadership skills.
e) Evaluate self SWOC analysis and set his career goals.

Syllabus:	Hours
Module 1: Competitive Examinations	**5**
Central Government Examinations: UPSC, SSC, IBPS, LIC, RRB, RBI, NABARD and Department of Posts. **Karnataka State Government Examinations**: KPSC, KEA, KSPEB. Eligibility criteria for various examinations. Common Examination pattern. **Private Organizations:** Access vacancies fromNaukari.com; Indeed.com; shine.com; linkedin.com etc., **Practical:** Explore various vacancies notified by the above-stated authorities.	
Module 2: Quantitative aptitude, logical reasoning, and analytical ability	**10**
Quantitative aptitude: Percentage, Profit or loss calculation, Time and work, Speed and Distance, Ratio and proportion. (Simple problems) **Logical Reasoning:** Coding and Decoding, Blood Relations, Directions, and Venn Diagram. **Analytical Ability:** Statement and assumptions and Data interpretation. **Practical:** Conduct Mock competitive examination for quantitative aptitude, logical reasoning and analytical ability.	
Module 3: Digital Literacy	**10**
Basic computer skills: MS Word and MS Excel (only layout, basic operations and short cut keys). MS PowerPoint, Internet and web browsing skills, Email etiquette. **Practical:** Draft an Email to the HR of a company as an aspirant for the job by attaching your resume.	
Module 4: Soft Skills	**10**

Communication Skills: Verbal and Non-verbal communication, Effective listening skills, Excellent writing skills, and Presentation skills.
Interpersonal Skills: Understanding the importance of teamwork, Conflict resolution, and Building positive relationships with team members.
Leadership skills: importance and Effective leadership.
Practical: As a team leader write a draft appreciation letter to the team members for the completion of the project successfully.

Module 5: Career Development and Workplace Etiquette	**10**

Career Development: SWOC analysis for self-assessment, setting career goals and creating a career plan, Job search strategies, Interview skills, and effective resume writing. **Workplace Etiquette:** Time Management- importance and strategies for effective time management, Dress code, personal grooming, Office and workplace manners, Meeting etiquette. Work ethics and integrity.

Practical:

1. Prepare a resume with at least 2 references.
2. Conduct a mock interview based on the resume prepared by the students.

Books for Reference:

1. Barun K Mitra, Personality Development and Soft Skills, Oxford university press, New Delhi.
2. GitangshuAdhikary, Communication and Corporate Etiquette, Notion Press, Mumbai.
3. Seema Gupta, Soft Skills- Interpersonal & Intrapersonal skills development, V&S Publishers, New Delhi.
4. Dr. R S Aggarwal, Quantitative Aptitude, S.Chand Publication, New Delhi.
5. Bittu Kumar, Mastering MS Office, V&S Publisher, New Delhi
6. List of Government Competitive Exams, Jobs & Vacancies (exampur.com)
7. https://www.safalta.com
8. https://sarkaariservice.in

Note: Latest edition of books may be used

Course Articulation Matrix – 23EMPBBA01

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	2	1	1	2	2	1	1
CO2	1	2	2	2	2	1	1	1	1	1	2	1
CO3	2	1	2	2	3	2	1	1	2	1	1	2
CO4	2	2	1	1	1	2	2	2	2	3	1	2
CO5	2	2	2	2	2	2	1	2	2	2	1	3
WA	**1.8**	**1.6**	**1.6**	**1.6**	**1.8**	**1.8**	**1.2**	**1.4**	**1.8**	**1.8**	**1.2**	**1.8**

DSC (18) Syllabus for BBA
Semester - VI

Course Code: 234629	Course Title: **Business Law**
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:60	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, Case studies, Tutorial classes, Group discussion, Seminar &field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to

a. Comprehend the laws relating to Contracts and its application in business activities.
b. Learn the rules for Sale of Goods and rights and duties of a buyer and a Seller.
c. Acquire knowledge about the importance of Negotiable Instrument Act and its provisions relating to Cheque and other Negotiable Instruments.
d. Infer the significance of Consumer Protection Act and its features
e. Understand the need for Environment Protection.

Syllabus:	**Hours**
Module No. 1: Indian Contract Act, 1872	**16**
Introduction – Definition of Contract, Essentials of Valid Contract, Offer and acceptance, consideration, contractual capacity, free consent. Classification of Contract, Discharge of acontract, Breach of Contract and Remedies to Breach of Contract.	
Module No. 2: The Sale of Goods Act, 1930	**12**
Introduction - Definition of Contract of Sale, Essentials of Contract of Sale, Conditions and Warranties, Transfer of ownership in goods including sale by a non- owner and exceptions. Performance of contract of sale - Unpaid seller, rights of an unpaid seller against the goods and against the buyer.	
Module No. 3: Negotiable Instruments Act 1881	**12**
Introduction – Meaning and Definition of Negotiable Instruments – Characteristics of Negotiable Instruments – Kinds of Negotiable Instruments – Promissory Note, Bills of Exchange and Cheques (Meaning, Characteristics and types) – Parties to Negotiable Instruments –Dishonour of Negotiable Instruments – Notice of dishonour – Noting and Protesting.	
Module No. 4: Consumer Protection Act 1986	**10**
Definitions of the terms – Consumer, Consumer Dispute, Defect, Deficiency, Unfair Trade Practices, and Services, Rights of Consumer under the Act, Consumer Redressal Agencies –District Forum, State Commission and National Commission.	

Module No. 5: Environment Protection Act 1986	10

Introduction - Objectives of the Act, Definitions of Important Terms – Environment, Environment Pollutant, Environment Pollution, Hazardous Substance and Occupier,Types of Pollution, Powers of Central Government to protect Environment in India.

Skill Developments Activities:

1. Discuss the case of "Carlill vs Carbolic Smoke Ball Company" case
2. Discuss the case of "Mohori Bibee v/s Dharmodas Ghose".
3. Briefly narrate any one case law relating to minor.
4. List at least 5 items which can be categorized as 'hazardous substance' according toEnvironment Protection Act.
5. List out any six cybercrimes.

Csases:

The relevant legal point, facts and the judicial decision relating to the following 10 case laws areto be specifically dealt with –

1. Balfour Vs Balfour
2. Carlill Vs Carbolic Smoke Ball Company
3. Felthouse Vs Bindley
4. Lalman Shukla Vs. Gauridutt
5. Durgaprasad Vs Baldeo
6. Chinnayya Vs Ramayya
7. Mohiribibi Vs. Dharmodas Ghosh
8. Ranganayakamma Vs Alvar Chetty
9. Hadley Vs Baxendale

Books for Reference:

1. M.C. Kuchhal, and Vivek Kuchhal, Business Law, Vikas Publishing House,New Delhi.
2. Avtar Singh, Business Law, Eastern Book Company, Lucknow.
3. Ravinder Kumar, Legal Aspects of Business, Cengage Learning
4. SN Maheshwari and SK Maheshwari, Business Law, National PublishingHouse, New Delhi.
5. Aggarwal S K, Business Law, Galgotia Publishers Company, New Delhi
6. Bhushan Kumar Goyal and Jain Kinneri, Business Laws, InternationalBookHouse
7. Sushma Arora, Business Laws, Taxmann Publications.
8. Akhileshwar Pathak, Legal Aspects of Business, McGraw Hill Education, 6thEd.
9. P C Tulsian and Bharat Tulsian, Business Law, McGraw Hill Education
10. Sharma,J.P. and Sunaina Kanojia, Business Laws, Ane Books Pvt. Ltd., NewDelhi

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https://www.studeersnel.nl

Course Articulation Matrix - 234629

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	1	2	2	1	1	2	1	2
CO2	2	2	1	2	1	2	1	2	2	2	2	2
CO3	2	2	2	2	2	2	2	1	2	2	2	2
CO4	2	2	2	2	2	2	3	2	2	1	1	2
CO5	2	1	2	2	2	2	2	2	2	2	1	2
WA	**2**	**1.8**	**1.8**	**2**	**1.6**	**2**	**2**	**1.6**	**1.8**	**1.8**	**1.4**	**2**

DSC (19) Syllabus for BBA **Semester -** VI	
Course Code: 234630	Course Title: **Income Tax – II**
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:60	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60
Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies & field work etc.,	
Course Outcomes: On successful completion of the course, the students will: a) Gain knowledge about the procedure for computation of income from business and otherProfession. b) Evaluate the provisions for determining the capital gains. c) Compute the income from other sources. d) Demonstrate the computation of total income of an Individual. e) Comprehend the assessment procedure and to know the power of income tax authorities.	
Syllabus:	**Hours**
Module No. 1: Profits and Gains of Business and Profession	**15**
Introduction-Meaning and definition of Business, Profession and Vocation. - Expenses Expressly allowed - Expenses Expressly Disallowed - Allowable losses - Expressly disallowed expenses and losses, Expenses allowed on payment basis. Problems on computation of income from business of a sole trading concern - Problems on computation of income from profession: Medical Practitioner - Advocate and Chartered Accountants.	
Module No. 2: Capital Gains	**10**
Introduction - Basis for charge - Capital Assets - Types of capital assets – Transfer - Computation of capital gains – Short term capital gain and Long term capital gain -Exemption under section 54, 54B, 54EC, 54D, 54F, and 54G. Problems covering the above sections.	
Module No. 3: Income from other Sources	**15**

Introduction - Incomes taxable under Head income other sources – Securities - Types of Securities - Rules for Grossing up. Ex-interest and cum-interest securities. Bond Washing Transactions - Computation of Income from other Sources.

Module No. 4: Set Off and Carry Forward of Losses & Assessment of individuals.	**10**

Introduction – Provisions of Set off and Carry Forward of Losses (Theory only)
Computation ofTotal Income and tax liability of an Individual.

Module No. 5: Assessment Procedure and Income Tax Authorities	**10**

Introduction - Due date of filing returns, Filing of returns by different assessees, E-filing
of returns, Types of Assessment, Permanent Account Number -Meaning, Procedure for obtaining PAN and transactions were quoting of PAN is compulsor**y.** Income Tax Authorities their Powers and duties.

Skill Developments Activities:

1. Visit any chartered accountant office and identify the procedure involved inthe computation of income from profession.
2. List out the different types of capital assets and identify the procedure involved in thecomputation of tax for the same.
3. List out the steps involved in the computation of income tax from othersources and critically examine the same.
4. Identify the Due date for filing the returns and rate of taxes applicable forindividuals.
5. Draw an organization chart of Income Tax department in your locality.
6. Any other activities, which are relevant to the course.

Books for References:

1. Dr. Vinod K. Singhania: Direct Taxes – Law and Practice, Taxmann publication.
2. B.B. Lal: Direct Taxes, Konark Publisher (P) ltd.
3. Dr. Mehrotra and Dr. Goyal: Direct Taxes – Law and Practice, Sahitya Bhavan Publication.
4. Dinakar Pagare: Law and Practice of Income Tax, Sultan Chand and sons.
5. Gaur & Narang: Income Tax.
6. Swamynathan C, Abhirami D, Srinivas G: Income tax

https://cleartax.in
https://www.bankbazaar.com
https://taxguru.in

Course Articulation Matrix - 234630

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	2	2	1	2	2	1	1	2	2	2	2
CO2	3	1	2	1	2	2	1	1	2	2	2	2
CO3	3	1	2	1	2	2	1	1	2	2	2	2
CO4	3	1	2	1	2	2	1	1	2	2	2	2
CO5	3	1	1	1	2	2	1	1	2	2	2	2
WA	**3**	**1.2**	**1.8**	**1**	**2**	**2**	**1**	**1**	**2**	**2**	**2**	**2**

DSC (20) Syllabus for BBA **Semester -** VI	
Course Code: 234631	Course Title: **International Business**
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:60	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the students will able to:

a) Acquire knowledge about the concepts of International Business.
b) Compare the Internal and External International Business Environment.
c) Evaluate the difference MNC and TNC
d) Understand the role of International Organisations in International Business.
e) Learn International Operations Management.

Syllabus:	**Hours**
Module No. 1: Introduction to International Business	**14**
Introduction- Meaning and definition of international business, need and importance ofinternational business, stages of internationalization, tariffs and non-tariff barriers to international business. Mode of entry into international business - exporting (direct and indirect), licensing and franchising, contract manufacturing, turnkey projects, management contracts, wholly owned manufacturing facility, Assembly operations, Joint Ventures, Third country location, Mergers and Acquisition, Strategic alliance, Counter Trade; Foreign investments.	
Module No. 2: International Business Environment	**12**
Overview, Internal and External environment - Economic environment, Political environment, Demographic environment, Social and Cultural environment, Technologicaland Natural environment.	
Module No.3: Globalization	**12**

Meaning, features, essential conditions favoring globalization, challenges to globalization, MNCs, TNCs - Meaning, features, merits and demerits; Technology transfer - meaning andissues in technology transfer.	
Module No.4: Organizations Supporting International Business	**12**
Meaning, Objectives and functions of - IMF, WTO, GATT, GATS, TRIM, TRIP; and RegionalIntegration- EU, NAFTA, SAARC, BRICS.	
Module No.5: International Operations Management	**10**
Global Supply Chain Management- Global sourcing, Global manufacturing strategies, International Logistics, International HRM - Staffing policy and it's determinants; Expatriation and Repatriation (Meaning only).	

Skill Developments Activities:

a) Tabulate the foreign exchange rate of rupee for dollar and euro currencies for 1month
b) List any two Indian MNC's along with their products or services offered.
c) Prepare a chart showing currencies of different countries
d) Collect and paste any 2 documents used in Import and Export trade.

Books for References:

1. Rakesh Mohan Joshi. (2011). International Business, Oxford University Press, NewDelhi.
2. Francis Cherunilam; International Business, Prentice Hall of India
3. P. SubbaRao – International Business – HPH

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https://archive.nptel.ac.in
https://www.worldsupporter.org

Course Articulation Matrix - 234631

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	1	2	1	1	1	2	2
CO2	2	1	2	2	1	1	2	1	1	2	1	2
CO3	2	1	1	1	1	2	1	2	2	1	2	2
CO4	2	2	2	2	2	1	2	2	2	2	2	2
CO5	2	2	2	1	2	2	2	1	2	2	2	2
WA	**2**	**1.6**	**1.8**	**1.6**	**1.6**	**1.4**	**1.6**	**1.4**	**1.6**	**1.6**	**1.8**	**2**

DSE (2) Syllabus for BBA
Semester – VI FN-2

Course Code: 234632	Course Title: **Security Analysis and Portfolio Management**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, Case studies, Tutorial classes, Group discussion,Seminar &field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to:

a) Gain knowledge on the basic concepts of Investment.
b) Illustrate the relationship between risk and return and evaluate the different investment alternatives.
c) Analyze and evaluate the fundamental investment analysis.
d) Comprehend the basics of Technical analysis.
e) Evaluate portfolio and portfolio management

Syllabus:	**Hrs.**
Module No. 1: Introduction to Investments	**10**
Introduction- Investment process, Criteria for Investment, types of Investors, Investment, Speculation and Gambling. Elements of Investment, Investment Avenues, Factors influencingselection of investment alternatives. Security Market- Introduction, functions, Secondary Market Operations. Stock Exchanges in India, Security Exchange Board of India, Government Securities Market, Corporate Debt Marketand Money Market Instruments.	
Module No. 2: Risk-Return Relationship	**05**
Meaning of risk, types off risk, measuring risk, risk preference of investors. Meaning of return, measures of return, holding period of return, Annualized return, expected return, investors' attitude towards risk and return.	
Module No. 3: Fundamental Analysis	**10**
Introduction- Investment Analysis, Fundamental Analysis, Macro Economic Analysis, IndustryAnalysis, Company Analysis, Trend Analysis, and Ratio Analysis.	
Module No. 4: Technical Analysis	**10**
Meaning of Technical Analysis, Fundamental vs Technical Analysis, Charting techniques, Technical Indicators, Testing Technical Trading Rules and Evaluation of Technical Analysis.	
Module No. 5: Portfolio Management	**10**
Framework-Portfolio Analysis – Selection and Evaluation – Meaning of portfolio – Reasons to hold portfolio – Diversification analysis – Markowitz's Model – Assumptions –Specific model – Risk and return optimization – Efficient frontier – Efficient portfolios –Leveraged portfolios – Corner portfolios –Sharpe's Single Index model – Portfolio-evaluation measures – Sharpe's Performance Index – Treynor'sPerformance Index – Jensen's Performance Index.	

Skill Development

1. Prepare an imaginary investment portfolio for individual with a salary of 10 lakhs per annum.
2. List of 10 companies approached SEBI for IPO
3. Prepare a technical analysis chart on Blue Chip Companies of BSE.
4. Collect information regarding GDRs, ADRs, IDRs and various Bonds and make a chart.
5. Watch market movement for a day and analyze the trend of Nifty-Fifty Index.

Books for Reference

1. A. Brahmiah & P. Subba Rao, Financial Futures and Options, HPH.
2. Singh Preeti, Investment Management, HPHG
3. Alexander Fundamental of Investments, Pearson Ed.
4. Hangen: Modern Investment theory. Pearson Ed.
5. Kahn: Technical Analysis – Plain and sample Pearson Ed.
6. Ranganthan: Investment Analysis and Port folio Management.
7. Chandra Prasanna: Managing Investment – Tata Mc Gram Hill.

https://www.managementstudyguide.com
https://www.udemy.com
https://www.investopedia.com
https://cleartax.in

Course Articulation Matrix - 234634

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	2	2	2	2	2	2	2
CO2	2	2	2	1	2	1	1	1	1	1	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
CO4	2	1	1	1	1	2	2	2	2	2	2	2
CO5	2	2	2	1	2	1	1	1	1	1	2	2
WA	**2**	**1.6**	**1.6**	**1.2**	**1.6**	**1.2**	**1.6**	**1.6**	**1.6**	**1.6**	**2**	**2**

DSE (2) Syllabus for BBA **Semester –** VI MK-2	
Course Code: 234633	Course Title: **Advertising and Media Management**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to:

a) Gain knowledge on the nature, role, and importance of IMC in marketing strategy
b) Evaluate the effective design and implementation of advertising strategies
c) Present a general understanding of content, structure, and appeal of advertisements
d) Analyze ethical challenges related to responsible management of advertising and brand strategy.
e) Evaluate the effectiveness of advertising and agencies role

Syllabus:	**Hours**
Module -1: Introduction to Integrated MarketingCommunication	**10**
Integrated marketing communication, AIDA Model, Setting goals and objectives, concept of DAGMAR in setting objectives, elements of IMC; Role of advertising in India's economic development, Ethics in advertising, Social, Economic and Legal aspects of advertising.	
Module -2: Consumer and Media	**10**
How advertising works: perception, cognition, affect, association, persuasion, behaviour, Associating feeling with brands, Use of research in advertising planning; Advertising Media; industry structure, functions, advantages, disadvantages of print, Television, Radio, Internet, Outdoor, Basic concept of media planning, media selection, Media Scheduling strategy, setting media budgets	
Module-3: Advertising Program	**10**
Planning and managing creative strategies; Creative approaches; Building Advertising Program: Message, Theme, advertising appeals; Advertising layout: howto design and produce advertisements; Advertising Budget: nature and methods of advertising appropriation; Art of copywriting; Guidelines for copywriting; Copywriting for print, Audio, TV and outdoor media.	
Module -4: Other Elements of IMC- Sales Promotion, PR, Events andExperiences and Word of Mouth	**10**
Consumer and trade sales promotion, application of sales promotion in different domains**;** Using public relations in image building**;** Planning and executing events, event management**;** Viral marketing, building organic word of mouth communication.	

Module -5:Measuring Effectiveness	**05**
Measuring Advertising Effectiveness: stages of evaluations and various types of testing-Pre and Post testing; Advertising agencies: history, role, importance, organizational structure, functions; Selection of agency, client agency relationship, compensation strategies	
Skill Development Activities: a) List out ethical issues in Advertisements. b) List out different modes of Advertisement. c) Write a note on guidelines for copywriting. d) List out types of Outdoor Advertisement. e) State the process in selection of Advertisement Agency.	
Books for References: 1. Advertising Principles and Practice, William Wells, John Burnett, Sandra Moriarty, 6th ed., Pearson education, Inc. 2. Advertising and Promotion, G.Belch, Michael Belch, Keyoor Purani, 9th edition, Tata Mcgraw Hill publication, ISBN: 978-1-25-902685-0. https://www.studocu.com https://www.enotesmba.com https://archive.mu.ac.iN	

Course Articulation Matrix - 234633

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	1	2	2	2	1	2
CO2	3	1	1	1	1	1	1	2	2	2	2	2
CO3	2	1	1	1	1	1	1	2	2	2	2	2
CO4	2	1	1	1	1	1	1	2	2	2	2	2
CO5	2	2	2	2	2	1	1	2	2	1	1	2
WA	**2.4**	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**	**1**	**2**	**2**	**1.8**	**1.6**	**2**

DSE (2) Syllabus for BBA Semester – VI HRM-2	
Course Code: 234634	Course Title: **Human Resources Development**
Course Credit (L:T:P):3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to:

a) Acquire knowledge about HRD.
b) Comprehend the framework of HRD.
c) Assess the models for evaluating the HRD programs.
d) Evaluate the need for employee counseling.
e) Apprehend the HR performance.

Syllabus:	**Hours**
Module No.1: Conceptual Analysis of HRD	**08**
Introduction – Meaning and Definition of HRD - Need for HRD-Multiple Goals of HRD – HRD Department and its Task –HRD for Organizational Effectiveness – HRD in the Indian Context -HRD Mechanisms.	
Module No.2: Frame Work of Human Resource Development	**10**
Frame work of Human Resource Development –HRD Processes-Assessing HRD Needs-HRD Model - Designing Effective HRD Program - HRD Interventions– Training Methods- Training - On-the-Job and Off-the-Job training- Brain Storming - Case Studies - Role Plays -Simulations – T-Groups - Transactional Analysis.	
Module No. 3: Human Resource Performance	**10**
Introduction -HR Performance and Bench Marking - Impact of Globalization on HRD-Diversity of Work Force - Work Force Reduction - Realignment and Retention - HRD programs for diverse employees.	
Module No. 4: HRD Evaluating Programs	**09**
Evaluating HRD Programs- Models and Frame Work of Evaluation - Assessing the Impact of HRD Programs - Human Resource Development - Applications - Fundamental Concepts of Socialization.	
Module No. 5: Employee Counselling Services	**08**
Introduction - Employee counselling – Counselling as an HRD Activity - Counselling Programs – components and characteristics, Issues in Employee Counselling.	

Skill Development Activities:

1. Encourage students to visit any business outlet and learn about the various developmental activities undertaken for their Employees.
2. Conduct in-class Transactional analysis' activities
3. Promote student to come up with their own ideas to manage work force diversity.
4. Conduct Role plays taking real world scenarios.

Books for References:

1. Werner & Desimone, Human Resource Development, Cengage Learning, 2006

2. William E. Blank, Handbook For Developing Competency Based Training, Programmes Prentice-Hall, New Jersey, 1982.

3. Uday Kumar Haldar, Human Resource Development, Oxford University Press, 2009

https://backup.pondiuni.edu.in

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https://mis.alagappauniversity.ac.in

Course Articulation Matrix – 234634

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	1	2	2	2	2	2	1	2
CO2	2	1	1	1	2	1	1	2	2	1	1	2
CO3	2	1	1	2	2	2	1	2	2	2	1	1
CO4	1	2	1	1	1	1	1	1	2	2	1	1
CO5	2	1	2	2	2	1	1	2	2	2	2	2
WA	**1.8**	**1.4**	**1.4**	**1.6**	**1.6**	**1.4**	**1.2**	**1.8**	**2**	**1.8**	**1.2**	**1.6**

DSE (2) Syllabus for BBA
Semester – V RM-2

Course Code: 234635	Course Title: **Retail Operations Management**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom lectures, Case studies, Group discussion, Seminar &field work etc.,

Course Outcomes: On successful completion student will demonstrate:

a) Compare various retail formats and technological advancements for setting up appropriate retail business.
b) Identify the competitive strategies for retail business decisions.
c) Examine the site location and operational efficiency for marketing decisions.
d) Analyse the effectiveness of merchandising and pricing strategies.
e) Assess store layout and planogram for retail business.

Syllabus:	**Hours**
Module -1: Retail and Logistics Management	**07**
Introduction Retailing and economic significance- Functions of a retailer - Types of retailers – Trends in retailing – International Retailing – Retailing as a career –Retail Management Decision Process - Service Retailing.	
Module -2: Retailing Environment Theories	**10**
Theory of Retail Change: Theory of Natural Selection in retailing, Theory of Wheel of retailing, General-Specific-General Cycle or Accordion Theory, Retail Life Cycle Theory- - Multi channel retailing – Retail Aggregators Business Model – Phases of growth of retail markets – Retail Mix.	
Module-. 3: Store Loyalty Management and Retail Location	**10**
Types of customers – Variables influencing store loyalty – Store loyalty models – Influencing customers through visual merchandising – Value added through private labels – Retail location strategy– Importance of location decision – Retail location strategies and techniques – Types of retail locations.	
Module -4: Merchandise Management	**10**
Meaning - Roles and responsibilities of the merchandiser and the buyer – Function of Buying for different types of Organizations – Process of Merchandise Planning – Merchandise Sourcing – Methods of procuring merchandise – Concept of private label - Retail Pricing policies.	
Module- 5: Category Management	**08**
Meaning - Definition of Category Management - Components of Category Management - Category Management Business process - Category Definition - Defining the Category Role-Destination Category, Routine Category, Seasonal Category, Convenience Category - Category Assessment - Category PerformanceMeasures - Category Strategies - Category Tactics - Category Plan implementation - Category Review.	

Skill Development Activities:

a) Write a note on Visual merchandising training programme layout design, and product placement.

b) Write a note Leadership training: Develop skills in coaching, delegation, and motivation.

c) Derive Customer analysis by considering skills in understanding customer behavior and preferences to improve customer satisfaction.

d) Chart out the types of customers in creating customer loyalty programs.

Books for References:

1. Coughlem: Marketing Channels.ϖ Gilbert Pearson: Retail Marketing Education Asia 2001.
2. Micheal Levyϖ & Barton AWeitz: Retailing Management, McGraw
3. Patrick M Dunne: Robert F Lusch: Retail Management Hill Publications.
4. Suja Nair: Retail Management, Himalaya Publishing House.ϖ

https://www.academia.edu
https://www.studocu.com
https://ebooks.lpude.in

Course Articulation Matrix - 234635

	PO1	PO2	P03	P04	P05	P06	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	2	1	1	2	2	2	1	1
CO2	2	2	1	1	2	1	2	1	2	2	2	2
CO3	2	1	2	1	2	2	1	1	1	2	2	1
CO4	2	1	1	1	2	2	2	1	1	2	1	2
CO5	2	1	1	1	2	1	1	1	1	2	1	2
WA	**2**	**1.4**	**1.2**	**1.2**	**2**	**1.4**	**1.4**	**1.2**	**1.4**	**2**	**1.4**	**1.6**

Vocational -2 Syllabus for BBA
Semester - VI

Course Code: 234636	Course Title- **Goods And Services Tax**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week: 3
Total Contact Hours: 45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classroom's lecture, tutorials, Group discussion, Seminar, Case studies.

Course Outcomes: On successful completion Student will demonstrate

a) Gain knowledge on the basics of taxation, including the meaning and types of taxes, andthe differences between direct and indirect taxation.
b) Analyze the history of indirect taxation in India and the structure of the Indiantaxation system.
c) Illustrate the framework and definitions of GST, including the constitutional framework, CGST, SGST, IGST, and exemptions from GST.
d) Evaluate the time, place, and value of supply under GST, and apply this knowledge to calculate the value of supply and determine GST liability.
e) Comprehend input tax credit under GST, including its meaning and process foravailing it, and apply this knowledge to calculate net GST liability.

Syllabus	**Hours**
Module No. 1: Basics of Taxation	**5**
Tax – Meaning and Types, Differences between Direct and Indirect Taxation, Brief History of Indirect Taxation in India, Structure of Indian Taxation.	
Module No. 2: Goods and Services Tax –Framework and Definitions	**10**
Introduction to Goods and Services Tax, Constitutional Framework, Orientation to CGST, SGST and IGST, Meaning and Scope of Supply, Types of Supply. Exemptions from GST.	
Module No. 3: Time, Place And Value of Supply	**10**
Time of Supply – in case of Goods and in case of Services - Problems on ascertaining Time of Supply; Place of Supply – in case of Goods and in case of Services (both General and Specific Services) – Problems on Identification of Place of Supply; Value of Supply – Meaning, Inclusions and Exclusions. Problems on calculation of 'Value of Supply'.	
Module No. 4: GST Liability and Input Tax Credit	**10**
Rates of GST – Classification of Goods and Services and Rates based on classification, Problems on computation of GST Liability. Input Tax Credit – Meaning, Process for availing Input Tax Credit – Problems on calculation of Input Tax Credit and Net GST Liability.	
Module No. 5: GST Procedures	**10**

Registration under GST, Tax Invoice, Levy and Collection of GST, Composition Scheme, Due dates for Payment of GST, Accounting record for GST, Features of GST in Tally Package. GST Returns – Types of Returns, Monthly Returns, Annual Return and FinalReturn – Due dates for filing of returns. Final Assessment. Accounts and Audit under GST.

Skill Developments Activities:

a) List out the process of GST registration for a business.
b) Chart out 'time of supply' concept relevance in GST.
c) Identify the place of supply for goods and services in different scenarios.
d) Calculate GST liability for a particular transaction using imaginary values.
e) Explain the process of availing input tax credit in GST.

Books for Reference:

1. V Rajesh Kumar and Mahadev, "Indirect Taxes", Mc Graw Hill Education
2. Datey, V S, "Indirect Taxes", Taxmann Publications.
3. Hiregange et al, "Indirect Taxes:, Puliani and Puliani.
4. Haldia, Arpit, "GST Made Easy", Taxmann Publications.
5. Chaudhary, Dalmia, Girdharwal, "GST – A Practical Approach", Taxmann Publications.

https://www.gst.gov.in
https://cbic-gst.gov.in
https://gstcouncil.gov.in

Course Articulation Matrix - 234636

GST	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	2	2	2	2	1	2	1	2	1	1	2	2
CO2	1	1	1	1	2	1	2	1	1	1	2	2
CO3	2	1	2	2	1	2	1	2	1	1	2	2
CO4	2	1	1	1	2	1	2	1	1	1	2	2
CO5	1	1	2	2	1	2	2	2	1	1	2	2
WA	**1.6**	**1.2**	**1.6**	**1.6**	**1.4**	**1.6**	**1.6**	**1.6**	**1**	**1**	**2**	**2**

Vocational - 2 Syllabus for BBA
Semester - VI

Course Code: 234637	Course Title **Enterprise Resource Planning**
Course Credit (L:T:P): 3(3:0:0)	Teaching Hours/Week:3
Total Contact Hours:45	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group iscussion,Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students' will be able to

a) Evaluate the business process of an enterprise to grasp the activities of ERP project management cycle to understand the emerging trends in ERP developments.

b) Integrate and automate the business processes and shares information enterprise-wide.

c) Explore the significance of ERP to provide a solution for better project management.

d) Enable the students to understand the various process involved in implementing ERP in a variety of businessenvironment

e) Evaluate the issues involved in design and implementation of ERP systems.

Syllabus:	**Hours**
Module No. 1: Introduction to ERP	**10**
Enterprise Resource Planning - Defining ERP - Origin and Need for an ERP System - Benefits of an ERP System - Reasons for the Growth of ERP Market – Risk of ERP - Road map for successful ERP	
Module No. 2: ERP related Technologies and Modules	**10**
Business Process Re- engineering – Product life cycle – Customer relationship management - Functional Modules- Sales and Distribution, service - Human Resource - Finance – Production - Materials Management – Purchasing – Quality Management..	
Module No. 3: ERP implementation	**10**
ERP Implementation Life cycle – Transition strategies - ERP Implementation Process - ERP Vendor Selection - Role of the Vendor - Consultants: Types of consultants - Role of a Consultant - Vendors and Employees -Resistance by employees - Dealing with employee resistance - Project team	
Module No. 4: ERP post implementation	**10**
Success and Failure factor of ERP implementation – ERP operations and maintenance – Data Migration – Project Management and Monitoring - Maximizing the ERP system.	
Module No. 5: Future directions in ERP	**5**
New Trends in ERP- ERP to ERP II - Implementation of Organization Wide ERP- Development of New Markets and Channels-Latest ERP Implementation Methodologies - ERP and E- business.	

Skill Development Activities:

1. State the steps and activities in the ERP life cycle
2. Develop a process of driven thinking towards business process.
3. Demonstrate a good understanding of the basic issues in ERP systems.

Any other activities, which are relevant to the course.

Books for Reference:

1. Alexis Leon, "ERP Demystified", Tata McGraw Hill, New Delhi, 2007.
2.Joseph A Brady, Ellen F Monk, Bret Wagner, "Concepts in Enterprise Resource Planning",Thompson Course Technology, USA, 2009
3.Vinod Kumar Garg and Venkitakrishnan N K, "Enterprise Resource Planning – Concepts and Practice", PHI, New Delhi, 2004
4.MahadeoJaiswal and Ganesh Vanapalli, ERP Macmillan India, 2013.
https://www.investopedia.com
https://www.sap.com
https://www.qad.com

Course Articulation Matrix - 234637

	PO1	PO2	P03	P04	P05	P06	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	2	2	1	2	1	2	2	2
CO2	1	1	2	1	1	1	1	1	2	2	2	2
CO3	2	1	1	2	2	1	1	1	1	2	2	2
CO4	2	2	2	2	1	1	2	1	2	2	2	2
CO5	1	1	2	1	2	1	1	1	1	2	2	2
WA	**1.6**	**1.2**	**1.6**	**1.6**	**1.6**	**1.2**	**1.2**	**1.2**	**1.4**	**2**	**2**	**2**

Internship

Semester: VI

Course Code: 23INTBBA01	**Course Title: Internship**
Course Credits: 03	**Hours of Teaching/Week:**
Total Contact Hours: 90 Hours Internship	**Formative Assessment Marks:** 100 Marks(C1=50+C2=50)

Note: This course will run as per the guidelines defined by the BoS, Business Administration, University of Mysore, Mysuru and the same is approved by BoS, Business Administration, SBRR Mahajana First Grade College, Mysuru.

Course Outcomes (COs):

CO1: Demonstrate the ability to apply management concepts and theories learnt in the classroom to real world business scenarios.

CO2: Enhance leadership abilities and interpersonal skills such as communication, conflict resolution, delegation and decision making through hands on experience in a professional setting.

Course Articulation Matrix – 23INTBBA01

CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO 1	3	3	3	3	3	3	2	3	3	3	3	2
CO 2	3	3	3	3	3	3	2	3	3	3	3	2
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**2**	**3**	**3**	**3**	**3**	**2**

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively for the semester. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

- **The student is evaluated for 100 marks in C1 and C2 as per the following scheme:**

Project Progress Presentation (**C1**): 50 marks

Project Development and Report (**C2**): 50 marks

Assessment Criteria	Marks
Project Presentation Skills	50
Project Development Skills and Report	50
Total	**100**

Guidelines for Continuous Internal Evaluation and Semester End Examination:

The CIE and SEE will carry 40% and 60% weightage each, to enable the course to be evaluated for a total of 100 marks, irrespective of its credits. The evaluation system of the course is comprehensive& continuous during the entire period of the Semester. For a course, the CIE and SEE evaluation will be on the following parameters:

Sl. No.	Parameters for the Evaluation	Marks
	Continuous Internal Evaluation(CIE)	
1	Continuous & Comprehensive Evaluation(CCE) – (A) (SEC-30 Marks)	20Marks
2	Internal Assessment Tests(IAT) –(B)	20Marks
	Total of CIE(A+B)- SEC-50 Marks	40Marks
3	Semester End Examination(SEE) – (C)-SEC-50 Marks	60Marks
	Total of CIE and SEE(A+B+C)	100Marks

Continuous Internal Evaluation:

a. **Continuous & Comprehensive Evaluation (CCE):**

Individual Assignments

i. Seminars/Class Room Presentations/Quizzes
ii. Group Discussions/Class Discussion/Group Assignments
iii. Case studies/Caselets
iv. Participatory &Industry-Integrated Learning/Industrial visits
v. Practical activities/Problem Solving Exercises
vi. Participation in Seminars/Academic Events/Symposia, etc.
vii. Mini Projects/Cap stone Projects

b. **Internal Assessment Tests (IAT):** The IAT will carry a maximum of 20% weightage (20 marks) of total marks of a course.

PATTERN OF QUESTION PAPER

(DSC, DSE, Vocational)

TIME: 2½ HOURS **MARKS: 60**

PART – A

Answer any FIVE of the following questions. Each question carries 2 marks. (5x2= 10)

1. ----------
2. ----------
3. ----------
4. ----------
5. ----------
6. ----------
7. ----------

PART – B

Answer any TWO of the following questions. Each question carries 10 Marks. (2x10 =20)

8. ----------
9. ----------
10. ----------
11. ----------

PART – C

Answer any TWO of the following questions. Each question carries 15 Marks (2X15=30)

12. ----------
13. ----------
14. ----------
15. ----------

PATTERN OF QUESTION PAPER

(SEC-Employability Skills)

TIME: 2 HOURS **MARKS: 50**

PART – A

Answer any FIVE of the following questions. Each question carries 2 marks. (5x2= 10)

1. ----------
2. ----------
3. ----------
4. ----------
5. ----------
6. ----------

PART – B

Answer any TWO of the following questions. Each question carries 10 Marks. (4x5 =20)

7. ----------

8. ----------
9. ----------
10. ----------
11. ----------

PART – C

Answer any TWO of the following questions. Each question carries 15 Marks (2X10=20)

12. ----------
13. ----------
14. ----------
15. ----------

Mahajana Education Society (R)
Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru - 570 012 Karnataka, INDIA

Affiliated to University of Mysore
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

DEPARTMENT OF COMMERCE

Motto:

Simply Better

Vision:

Imparting contemporary education to make the students well versed in the domain of Commerce and Business and honing the students to mount high with the prevailing corporate scenario.

Mission:

Syllabus for I and II Semester B.Com

(Under NEP Scheme)

2022-2023

Education to Excel

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Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA

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B.Com Program Structure [NEP] 2021-2022

Credit Pattern forCourses

L: Lecture; T: Tutorial; P: Practical

I SEMESTERB.COM								
Sl. No.	**Course Code**	**Titleofthe Course**	**Category ofCourses**	**Teaching Hourspe rweek (L+T+P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
1.	213129	Financial Accounting –I	DSC 1	4+0+0	60	40	100	4
2.	213130	Management PrinciplesandApplications	DSC 2	4+0+0	60	40	100	4
3.	213131	PrinciplesofMarketing	DSC 3	4+0+0	60	40	100	4
4.	213132 213133	A. BasicsofAccounting **OR** B. ManagingWorkforce	OEC 1	3+0+0	60	40	100	3
	Totalfor the I Semester				**240**	**160**	**400**	**15**
	II SEMESTERB.COM							
5.	213229	FinancialAccounting–II	DSC 4	4+0+0	60	40	100	4
6.	213230	Company Law	DSC 5	4+0+0	60	40	100	4
7.	213231	Law and Practice ofBanking	DSC 6	4+0+0	60	40	100	4
8.	213232 213233	A. FinancialLiteracy **OR** B. RetailManagement	OEC 2	3+0+0	60	40	100	3
	Totalfor the II Semester				**240**	**160**	**400**	**15**

I SEMESTER
DISCIPLINESPECIFICCOURSE(DSC) 1
FINANCIALACCOUNTING–I
(CourseCode : 213129)

LTP: 4+0+0 **(Hours perweek: 04) (Total: 64 Hours)**

Course Objective:

- To enable the students to understand the system of preparing financial statement of soletradingconcernandtocreateanawarenessinthestudentsaboutFinancialReportingStandards.

Course Outcome:

- Thestudentswillbeabletoprepareand analyse financialstatementsofsoletradingconcerns.

UNIT–IIntroductiontoFinancialAccounting: Meaning,DefinitionandscopeofAccounting – Objectives of Accounting – Functions of Accounting – Branches of Accounting – AccountingPrinciples-AccountingConceptsandConventions– AccountingStandards:MeaningandObjectives-IndianAccountingStandards,INDAS,IFRS– Distinctionbetween INDASand IFRS.

(10 Hours)

UNIT – IIAccounting for Hire Purchase System: Meaning – Features of Hire purchase system – Calculationofinterestunderdifferentmethods–ascertainmentofcashpriceofanasset– repossession(theory) -problemson hirepurchasesystem (assets accrual methodonly) **(15 Hours)**

UNIT – IIIAccounting for Installment System: Meaning–Features of installment system – differencesbetweenhirepurchase and installmentsystem–problems oninstallment system.

(15 Hours)

UNIT – IV Royalty Accounts: Meaning and Definition – Terms used – Royalty – Minimum rent – Short workings – surplus royalty – recoupment of short workings – stoppage of work due toabnormalcauses– problems onroyalty including minimum rent account. **(14 Hours)**

UNIT–VFinalaccountsofSoleTradingConcern: Financialstatements–PreparationofTradingand Profit and loss account and Balancesheetwith adjustments**. (10 Hours)**

SKILLDEVELOPMENT

1. VisitthreeSoleTradingConcernsandCollecttheFinancialStatementsofaSoleTradingconcerns.
2. CollectacopyofHirePurchaseagreement.
3. IdentifythebusinesseswhereRoyaltyaccountingisapplied
4. PrepareRoyaltyAnalyticalTable withimaginaryfigures.
5. IdentifythedifferencesbetweenINDASandIFRSwithrespecttoIAS 1,IAS16,IAS36,IAS37 andIAS 38

BooksforReference:

1. AccountingPrinciples;Anthony,R.N.andReece, J.S.:RichardIrwin Inc.
2. FinancialAccounting;Gupta,R.LandRadhaswamy,M:SultanChandandSons,NewDelhi.
3. FinancialAccounting;ProfB.HSureshandDr.G.HMahadevaswamy
4. AdvancedAccounts;Shukla.M.C.,GrewalT.S.,andGupta,S.C.:S.Chand&Co.NewDelhi.
5. CompendiumofStatementandStandardsofAccounting:TheInstituteofCharteredAccountantsofIndia, New Delhi.
6. FinancialAccounts,MishraA.K.:SahityaBhawanPublishersandDistributor.

I SEMESTER
DISCIPLINESPECIFICCOURSE(DSC) 2
ManagementPrinciplesandApplications
(CourseCode : 213130)

LTP: 4+0+0 **(Hours perweek: 04) (Total: 64 Hours)**

CourseObjective:

- Toenablethestudentstounderstandthevariousfunctionsofmanagement,varioustypesof organisations and to create awareness in the students about application of managementprinciplesin business organizations.

CourseOutcomes:

- The students will be able to understand and identify the different theories of organization,whichare relevant in thepresent context.
- Compareandchosethedifferenttypes ofmotivationfactorsandleadershipstyles.

UNIT – IIntroduction to Management: Meaning and Definition – Nature and Characteristics ofManagement – Scope of Management – Levels of Management - Administration Vs. Management –Functions of Management – Evolution of management thought: contributions of F.W. Taylor andHenry Fayol.
(14 Hours)

UNIT – IIPlanning: Meaning and Definition – Characteristics of Planning, Importance andBenefits of Planning – Steps in planning – Types of Planning – Limitations of Planning – Decisionmakingconcept.
(12 Hours)

UNIT–IIIOrganizing: MeaningandDefinition–PrinciplesofOrganisation–FormalVs.Informal Organisation - Types of Orgnisation - Functional Organisation – Matrix Organisation – TeambasedOrganisation–Departmentation– DecentralisationandDelegationofauthority.
(14 Hours)

UNIT – IVLeadership: Meaning – Qualities of a good leader – Types of Leadership styles – Motivation concept and theories – Maslow's hierarchy of needs – Herzberg's dual factor theory – McGregor'stheory Xand theory Y. **(12 Hours)**

UNIT – VControlling: Meaning and Definition – Importance of control – Steps in controlling - techniques of control – PERT, CPM, JIT – Co-ordination – Need for Co-ordination - Principles ofCo-ordination. **(12 Hours)**

SKILLDEVELOPMENT

1. Visitanybusiness organization andcollect thetypeofplanningadopted bythem.
2. Collectbio-data andphotographs ofany two leadingcontributors ofmanagement thoughts.
3. Analysetheleadershipstyles ofany selected fivecompanies ofdifferent sectors.
4. Visitanymanufacturingunit andidentifythecontrollingsystemfollowed.
5. Drawthe Organisation chartofanytwobusinessconcern.

BooksforReference:

1. PrinciplesofManagementbyKoontzandO'Donnell,McGrawHillEducation.
2. BusinessManagementby C.B.Gupta,SultanChand andsons
3. Principlesandpracticeof ManagementbyL.M.Prasad,SultanChandandSons
4. Management,StonerA FandFreemanR.E,PrenticeHall
5. P.C.Tripathi&PNReddy, PrinciplesofManagement,TMHPublications
6. Management:Principles andPracticesbyRickyW.Giffin

I SEMESTER
DISCIPLINESPECIFICCOURSE(DSC) 3
PrinciplesofMarketing
(CourseCode: 213131)

LTP: 4+0+0 **(Hours perweek: 04) (Total: 64 Hours)**

CourseObjective:

- Toenablestudents tounderstand thebasic concepts andprinciples ofMarketing

CourseOutcome:

- Studentswill beable tolearn the applicationofPrinciplesofmarketingbybusiness firms

UNIT–IIntroductiontoMarketing: MeaningandDefinitionofMarket,Marketing-CoreMarketing Concepts - Marketing Mix - Marketing environment - Functions of Marketing.4Ps and7Ps of marketing mix.Online Marketing- Relationship between Technology, Globalisation , SocialResponsibility and onlinemarketing. **(12 Hours)**

UNIT – IIProduct : Meaning of a Product - Product Plan -–Diffusion (Adoption) of Innovations- New Product idea - Stages in New Product Development- Causes for Failure of a new product - Productlifecycleand Marketing strategy. **(12 Hours)**

UNIT – IIIPrice and Promotion: Price: Meaning – Pricing Strategy – Types of PricingStrategies. Promotion: Meaning and Role of Promotion – Types of Promotion – Personal selling –Advertising – Publicity and Sales promotion - Elements of Promotional mix – Factors affectingPromotion Mix. **(16 Hours)**

UNIT -IVPlaceinMarketing mix : Channels ofDistribution–Types ofChannels ofDistribution - MiddlemenandDistribution-SelectionofthetypeofChannel-Retailing–NatureandImportance –Non-storeretailing-Wholesalingand PhysicalDistribution-NatureandImportanceofWholesalingandPhysical Distribution. **(14 Hours)**

UNIT–VConsumerBehaviour: Meaning -Features–Scope-Importance- Models of ConsumerBehaviour-Consumerreferencegroupsandtheirtypes– ConsumerbehaviorinOnlinemarketing.

(10 Hours)

SKILLDEVELOPMENT

1. NameanyfiveFMCG companiesinIndiaandidentify the pricingstrategyusedbyeachoneofthem.
2. Selectanyfivefirmsinautomobileindustryandidentifythepromotionalmethodsusedbyeachof thefirm.
3. Identify anyfiveproductsthatfailedinthe marketandidentify thecausesof failureforeachoftheproducts.
4. Selectanyfiveproductsandidentifythevariouschannelsofdistributionusedforeachofthem.
5. Identifyaproductin thegrowthstageand writeabout 4Psof marketingin it.

BooksforReference

1. PrincipleofMarketing-PhilipKotler,GaryArmstrongandPrafullaAgnihotri,PearsonPublication
2. PrinciplesofMarketing–RobertH.Utaraidand BrajendraKrGupta
3. PrinciplesofMarketing–CharlesWLamb,CengageIndiaLearningPLtd
4. PrinciplesofMarketing–DrAmitKumar,SahityaBhawanPublications
5. Marketing–Grewaland Levy,McGrawHillPublication

I SEMESTER
OPEN ELECTIVECOURSE(OEC) 1
A.BasicsofAccounting
(CourseCode:213132)

LTP:3+0+0 **(Hours perweek: 03) (Total: 48 Hours)**

CourseObjective:

- To enable the students to understand the basics of accounting, need for accounting inbusiness and the system of preparing financial statements - to create an awareness in thestudentsabout FinancialReporting Standards

CourseOutcome:

- The students will be able to prepare subsidiary books and to prepare and analyse financialstatementsof soletrading concern.

UNIT – I.Introduction to Accounting: Meaning – Need for accounting – Internal and Externalusers of Accounting – Accounting Concepts and Conventions – Indian Accounting Standards (INDAS)–InternationalFinancialReportingStandards(IFRS)DistinctionbetweenINDASand IFRS.

(08 Hours)

UNIT – II – Accounting Systems and Process: Nature of accounting – Systems of accounting:Single entry and Double entry – Process of accounting – Business transactions – Journal entries -Ledger(simple problems)**(11 Hours)**

UNIT – III Subsidiary Books: Sales book – Sales returns book – Purchases book – Purchasereturns book – Bills Receivable book – Bills Payable book – Cash book – Petty Cash book – Journalproper – Problems on preparation of Sales book, Sales returns book, Purchases book, Purchasereturns book, Cash book (single column, double column, three column) and Petty Cash book(simpleproblems)**(17 Hours)**

UNIT – IV.Final Accounts of Sole Trading Concern: Preparation of Trial Balance – PreparationofTrading andProfit and Loss accountand Balancesheet (simple problems)**(12 Hours)**

SKILLDEVELOPMENT

1. Collectthefinalaccountsof aSoleTradingconcern.
2. PrepareSubsidiarybookswithimaginaryfigures.
3. CollectCashbookpreparedbySoleTradingConcern.
4. IdentifythebusinesseswhereSingleentryandDoubleentrysystemsofBook-keepingarefollowed.

BooksforReference:

1. AccountingPrinciples;Anthony,R.N.andReece, J.S.:RichardIrwin Inc.
2. FinancialAccounting;Gupta,R.LandRadhaswamy,M:SultanChandandSons,NewDelhi.
3. Accountancy;B.S.Raman,UnitedPublishers,Mangalore.
4. AdvancedAccounts;Shukla.M.C.,GrewalT.S.,andGupta,S.C.:S.Chand&Co.NewDelhi.
5. CompendiumofStatementandStandardsofAccounting:TheInstituteofCharteredAccountantsofIndia, New Delhi.

I SEMESTER
OPEN ELECTIVECOURSE (OEC) 1
B.ManagingWorkforce
(CourseCode: 213133)

LTP: 3+0+0 **(Hours perweek: 03) (Total: 48 Hours)**

CourseObjective:

- Toenablethestudentstounderstandthebasicsofmanagingworkforceatworkplaceandknowthepr ocess of selection, training and development.

CourseOutcome:

- Thestudentswillbeabletomanagethemselvesatworkplaceandknowthenuancesofmanaginghum an resources.

UNIT – IIntroduction: Concepts of human resource management- Meaning - Objectives-Scopeand functions**.(10 Hours)**

UNIT–IIHumanResourcesPlanningandProcurement: Humanresourceplanning-importance-objectives and problems. Recruitment-meaning - recruitment policy - sources – factorsaffectingrecruitment-selectiondecision -selection procedure.**(14 Hours)**

UNIT - III Human Resource development: Meaning-concepts of HRD-objectives of training-organizationoftrainingprogrammers–methodsof training-advantagesand limitations oftraining.
(12 Hours)

UNIT - IV Compensation: Meaning - Factors determining employee compensation and rewards - dearnessallowance-employeebenefits-bonusandsocialsecurity-managerialcompensation.PerformanceAppraisal: concepts-objectives–Types**(12 Hours)**

SKILLDEVELOPMENT

1. Collectinformationregardingtherecruitmentandselectionprocessadoptedbyanyoneofthe Companies/organisationslocated in yourDistrict.
2. Visitandcollectthetrainingmethodadoptedbya company.
3. Visitandcollectthe methodsofcompensation adoptedbyanycompany.
4. IdentifythemethodsofPerformance appraisal adoptedbyanycompany.

BooksforReference:

1. HumanResourceManagement-P.SubbaRao
2. HumanResourceManagement-Dr.Ashwathappa
3. PersonnelandHumanResourceManagement-D.A. DeonzandF.P.Robins
4. HumanResourceManagement –PrasannaChandra.

IISEMESTER
DISCIPLINESPECIFICCOURSE (DSC) 4
FINANCIALACCOUNTING–II
(CourseCode:213229)

LTP:4+0+0 (Hours per week: 04) (Total: 64 Hours)

CourseObjective:

- Toenablethestudents tounderstandthemaintainingofaccountsforvarioustypesofbusinessfirms including non-profitorganizations.

CourseOutcome:

- ThestudentswillbeabletopreparethefinalaccountsofbusinessfirmsandNPOandtheywillbeable to account for loss of stock.

UNIT – IBranch Accounts: Meaning – Objectives – Types of Branches – Dependent Branches – Features – Goods Sent to branchat Cost price and Invoice price – Preparation of Branch accountandotherrelevant ledgeraccounts in thebooksofHead Office(Debtors system only)**(15 Hours)**

UNIT – IIDepartmental Accounts: Meaning – Objectives – Basis of apportionment of expensesandincomes– PreparationofTradingandProfitandlossaccountincolumnarmethodandCommonBalancesheet (Sole trading concerns only)**(10 Hours)**

UNIT – IIIConsignment Accounts: Meaning – Consignor – Consignee – Goods consigned atCost price and Invoice price – Commission – Types of Commission - Abnormal loss – Valuation ofStock – creation of stock reserve account – Problems on Consignment both Cost price and Invoiceprice.**(14 Hours)**

UNIT – IVFire Insurance Claims: Meaning of fire insurance – need – Loss of stock by fire –steps involved in the computation of fire claims – Average clause – Treatment of abnormal linegoods – Problems on computation of fire insurance claims including average clause and abnormallineofgoods.**(10 Hours)**

UNIT – V Final accounts of Non-Profit Organisations: Meaning of Non-profit organisations – objectives–need–capitalreceiptsandcapitalexpenditure-revenuereceiptsandrevenueexpenditure – treatment of special items – Problems on preparation of Income and Expenditureaccountand Balancesheet from Receipts and Paymentsaccount.**(15 Hours)**

SKILLDEVELOPMENT

1. Preparationof accountsaleswithimaginaryfigures.
2. Calculationoffireinsuranceclaimswith imaginaryfigures.
3. CollectionoffinalaccountsofaNon-Profit Organisation andidentifyingCapitalandrevenueitems
4. Visitanybranchandcollectthefinancialstatementsofthebranch.
5. Preparationof DepartmentalTradingandProfit/Lossaccountwithimaginaryfigures.

BooksforReference:

1. AccountingPrinciples;Anthony,R.N.andReece, J.S.:RichardIrwin Inc.
2. FinancialAccounting;Gupta,R.L and Radhaswamy,M:Sultan ChandandSons.
3. FinancialAccounting;ProfB.HSureshandDr.G.HMahadevaswamy
4. CompendiumofStatementandStandardsofAccounting:TheInstituteofCharteredAccountantsofIndia, New Delhi.
5. FinancialAccounts,MishraA.K.:SahityaBhawanPublishersandDistributors.

IISEMESTER

DISCIPLINESPECIFICCOURSE(DSC) 5

CompanyLaw

(CourseCode:213230)

LTP: 4+0+0 **(Hours per week: 04) (Total: 64 Hours)**

Course Objective:

- Toenablethestudentstounderstandthetypesofcompaniesincorporatedin Indiaandthepromotersin volved in forming acompany andCompany administrationtillits Liquidation.

Course Outcomes:

- Thestudents willunderstand theframe workof CompaniesAct of2013.
- Identifythestagesofformation anddocuments involvedintheformation ofacompany.
- RoleofManagerialPersonnel and procedureof conductingcompany meetings.

UNIT – IIntroduction to Company: Meaning and Definition – Features of Companies Act of2013 – Types of Companies –Private Company - Public Company -Company Limited by Shares – Company Limited by Guarantee – Unlimited Companies – One Person Company – Holding andSubsidiaryCompanies– Government Company -AssociateCompany.**(13 Hours)**

UNIT – IIFormation of Companies: Introduction – Steps involved in formation of a company – Position and Functionsof Promoters –Meaning andcontents ofProspectus, Memorandum ofAssociationandArticlesofAssociation–AlterationofMOAandAOA-CertificateofCommencementofBusiness–FormationofGlobalCompanies–Features–Legalformalities. **(15 Hours)**

UNIT – IIICompany Administration: Managerial Personnel – Managing director appointment,powers, duties and responsibilities– Whole time Director –Independent Director **–** Auditor'sappointment:Qualification,dutiesandresponsibilities– CompanySecretary:Qualifications,Appointment,Rights, Duties, Liabilities and Removal.**(15 Hours)**

UNIT–IVCompanyMeetings: Meaning–Typesofcompanymeetings–Importance—Requisites of a valid meeting – Notice – Quorum – Resolutions– Voting - Proxy – Role of aCompanySecretary inconvening themeetings.**(12 Hours)**

UNIT – VLiquidation of Companies: Meaning – Modes of Liquidation – Consequence ofLiquidation– Appointmentof OfficialLiquidator–Duties andResponsibilities ofLiquidator. **(09 Hours)**

SKILLDEVELOPMENT:

1. CollecttheProspectus,MemorandumofAssociationandArticlesofAssociationofaCompany.
2. Collecta noticeof ameeting from anycompany.
3. Listthenames ofDirectorsand ManagingDirectorofanyfivecompanies.
4. ListthenamesoffulltimecompanysecretariesinIndia.
5. Nameanyfivecompaniesliquidatedduringlast2yearsinIndia.

BooksforReference:

1. CompanyLawandSecretarialPracticebyN.D.Kapoor,SultanChandandSons
2. CompanyLawandSecretarialPracticebyS.C.Kuchal
3. ElementsofCorporateLawbyS.N.Maheshwari, HimalayaPublicationHouse
4. CorporateAdministrationbyK.Venkataramana, SHBP
5. BusinessLawforManagementbyBalachandran,HimalayaPublishingHouse.

IISEMESTER

DISCIPLINESPECIFICCOURSE(DSC) 6

LawandPracticeofBanking

(CourseCode: 213231)

LTP:4+0+0 **(Hours per week: 04) (Total: 64 Hours)**

CourseObjective: To enable students to acquire specialized knowledge of law and practice relating toBanking.

CourseOutcome: Students will understand the conceptual frame work of Banking, classification ofBanking,banker andcustomer relationshipand E-Banking services.

UNIT – IIntroduction to Banking: Origin and Evolution of banks - Meaning and definition ofbanking - Classification of Banks – Commercial Bank, Investment/Industrial Bank- Co-operativeBank - Land Development Bank -Exchange Bank - Central Bank -Saving Bank. Banking system –Branch Banking, Unit Banking, Group Banking, Chain Banking, Mixed Banking, Narrow Banking,UniversalBanking and offshoreBanking**(16 Hours)**

UNIT – IIReserve Bank of India: – Constitution – Nationalisation – Management of RBI – organisationrestructuring–MainfunctionsofRBI–MeasuresofCreditcontrol.RBIandAgriculturalcredit – RBIandIndustrialFinance.Demonetisationand itsimpact.**(12 Hours)**

UNIT – IIIBanking Regulation Act, 1949: Origin of the Act - objectives and features. Bankingsector reforms - Narasimhan Committee Report I and II – Prudential norms: Capital Adequacynorms.NPA:–Meaning -factorscontributing toNPAs-remediesavailable-recentmeasures.
(14 Hours)

UNIT–IVBankerandCustomer:–Banker-Customer–therelationshipbetweenabankeranda customer: general relationship and special relationship. Cheque:– statutory obligation to honourcheques-bankers lien- A bankers duty to maintain secrecy of customer's account-right to claimincidentalcharges-rightto charge compound interest.**(12 Hours)**

UNIT – VE –Banking: Meaning - traditional banking v/s E- banking-Electronic deliverychannels-facetsofE–banking-E-bankingtransactions–TruncatedchequeandElectronicCheque
– Mobile Banking – Inter Bank Mobile Payment Service (IMPS) – Virtual Currency – Models forE-banking– Advantagesof E-Banking– Constraints inE-Banking– Security Measures– RealTimeGross Settlement (RTGS)–National Electronic Fund Transfer(NEFT).**(10 Hours)**

SKILLDEVELOPMENT

1. IdentifytheCommercialBanksinyourarea
2. ListouttheInvestment BanksinyourDistrict
3. VisitaBankandlistoutthestepsfollowedtoavailE-Bankingfacility
4. VisitaBank andpreparereportwithrespect toNPA
5. IdentifythebeneficiariesofMUDRASchemeinyourlocality

BooksforReference:

1. BankingTheory,Law andPractice-E.GordanandK.Natarajan
2. Money,Banking,InternationalTradeandPublic Finance–MLJhingan
3. IndianFinancialSystem-VasanthDesai
4. Marketingof FinancialServices- V.A.Avadhani
5. IndianFinancialSystem-VarshenoyandMittal
6. TheLaw andPracticeof Banking– JMHolden

IISEMESTER
OPEN ELECTIVECOURSE(OEC) 2
A. Financial Literacy
(CourseCode: 213232)

L+T+P:3+0+0 **(Hours perweek: 03) (Total: 48 Hours)**

CourseObjective:

- Tocreateawarenessinstudentabouttheneedforpossessingfinancialliteracyeducation.

CourseOutcomes:

- The students will be able to understand the importance of financial literacy and preparefinancialplans and budgets.
- The student will be able to describe the importance of insurance services as social securitymeasures.

UNIT – IIntroduction: Financial Literacy- Meaning and Importance- Components of FinancialLiteracy- Financial Institutions : Meaning, Banking and Non Banking Financial Institutions, Postoffices . Investment: Meaning, Difference between Investment Vs Gambling- Risk andReturn **-**Principles of investment - Investment Avenues –Financial Planning and Budgets , Family Budget,BusinessBudget and National Budget. Budget deficit andSurplus.**(16 Hours)**

UNIT – IIBanking: Meaning and Types of Banks, Various services offered by banks, types ofbank deposit accounts, Formalities to open various types of bank accounts, KYC norms.VarioustypesofLoans:Short-term,MediumtermandLongtermloans.Cashlessbanking,e-banking,ATM,Debit and Credit cards, banking Complaints.**(12 Hours)**

UNIT – IIIFinancial Services from Post Office: Post office Savings Schemes: Savings account - Recurring deposit -Term Deposit - Monthly Income Scheme - Kissan Vikas Pathra – NSC – PPF - SeniorCitizenSavingsScheme-SukanyaSamriddhiYojana/Account-IndianPostPaymentsBank - MoneyTransfer -MoneyOrder.**(09 Hours)**

UNIT – IVInsurance Services: Life Insurance – Life Insurance Policies - Term Insurance andEndowment Policies - Pension Policies - Health Insurance Plans – ULIP - Property Insurance - General Insurance - Types, Postal Life Insurance Schemes- Housing Loans - Institutions providingHousingLoans, Pradhanmantri Awas Yojana: Rural and Urban.**(11 Hours)**

SKILLDEVELOPMENT

1. Visitanationalizedbanknearyourareaandcollectinformationregardingservicesofferedbythe bank.
2. Visitapostofficeinyourareaandcollectinformationaboutvariousdepositschemesavailable.
3. Collectanaccountopeningformfromanationalizedbankandfilluptheformwithnecessaryenclosures. Collect anaccount openingform froma postofficeandfill theform.
4. Prepareanannual familybudgetconsideringtheincomeofyourfamily.Alsoprepareapersonalbudget for six months.
5. Visit a LIC branchin your area and collectinformation regarding anyfiveinsurance policies(withits features).

BooksforReference:

1. Avadhani,VA(2019),InvestmentManagement,Mumbai:HimalayaPublishingHousePvtLtd
2. Chandra,P(2012),InvestmentGame:HowtoWin.NewDelhi:TataMcGrawHillEducation.
3. Kothari,R(2010),financialServicesinIndia:Conceptandapplication.NewDelhi:SagePublicatio nIndia Pvt td
4. MillingB.E,(2003),TheBasicsofFinance:FinancialToolsforNonFinancialManagers,Indiana: UniverseCompany.
5. Zokaityte,A(2017), FinancialLiteracyEducation.London:PalgraveMacmillan.

IISEMESTER

OPEN ELECTIVECOURSE(OEC) 2
B.Retail Management
(CourseCode:213233)

L+T+P:3+0+0 **(Hours perweek: 03) (Total: 48 Hours)**

CourseObjective:

- To enable students to understand how the retail business functions and highlight the scope ofretailbusiness in Indiaand across the world

CourseOutcome:

- Studentswillbeabletoacquireskillsrequiredformanagingretailbusinessandstarttheirownretail business in thefuture

UNIT IRetailing: Meaning –Definition -Nature - Importance- Functions of Retailing -Factors influencing retailing-Types of Retailing – Forms of Retail Business ownership,Theory of Retail Development-Wheel of Retailing - Retail Life Cycle - Retail Business inIndia - Globalization of Retailing - Reasons for globalization -Problems in GlobalisationofRetailing .**(12 Hours)**

UNITIIRetailOrganisationandManagement: Introduction-ClassificationofRetailOrganization. Store Operations: Retail Store Planning - Factors influencing location of a store -Store Layout – Merchandise Management - Category Management - Shelf Management-POS(Pointof Sale)/Cash Process.**(12 Hours)**

UNITIIIHumanResourceManagementinRetailing: ManpowerPlanning–Recruitmentin Retail sector - Problems in Retail Recruitment -Retail Training -Retail Managers : Roles –Skill - Employment Opportunities in Retail Industry.**(09 Hours)**

UNIT IVE-Retailing: Meaning of E Retailing - Types of Technology in Retailing - FactorsInfluencing use of IT in Retailing -Electronic Article Surveillance – Electronic Shelf Labels -Effective Management of Online catalogues - Customer Relationship Management: Customerdatabase-Identifyinginformation-Analysingcustomerdatabaseandidentifyingtargetcustomers-Customer pyramid-Customer retention.**(15 Hours)**

SKILLDEVELOPMENT:

1. Visitamodern retailstoreinyourareaandidentifyits organizationstructure
2. Visita mall and identify thevarioustypes ofshops in the mall
3. Nameanyten e-retailersintheworld
4. Visitasupermarketinyourareaandcollectinformationabouttherolesandresponsibilitiesof themanager
5. NameanyTen Globalretailers.

BooksforReference:

1. SujaRNair,RetailManagement, VEdition,HPH, Mumbai,2006
2. SwapnaPradhan,RetailingManagement-TextandCases,IIEdition,TataMcGrawHill,India,2007
3. S.K.Pradhan andOthers, RetailManagement ,VPH.
4. PiyushKumarSinhaandDwarikaPrasadUniyal-ManagingRetailing,OxfordUniversityPress,Delhi
5. R.S.Tiwari,RetailManagement ,HimalayaPublishingHouse.
6. LevyMichael,WeitzBarton-RetailingManagement,VEdition,TataMcGrawHill,NewYork,2006
7. LucasG.H.,BushRobert,GreshamLarry-Retailing,HoughtonMifflinCompany,Boston,1994.

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B.Com I /II Semester(NEP)
Question Paper Pattern

Time: 3Hours **Max. Marks:60**

PART– A

Answerany**FIVE** ofthefollowingquestions. Eachquestion carries**2marks**.

(5x2=10 Marks)

1. ----------
2. ----------
3. ----------
4. ----------
5. .....
6. .....
7. .....

PART– B

Answerany**TWO**ofthefollowingquestions.Eachquestioncarries**10Marks**.

(2x10=20 Marks)

8. .....
9. .....
10. .....
11. .....

PART– C

Answerany**TWO**ofthefollowingquestions.Eachquestioncarries**15Marks**

(2x15=30 Marks)

12. ----------
13. ----------
14. ----------
15. ----------

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com.3.1
Name of the Course: Corporate Accounting

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs

Pedagogy: Classroom lectures, Case studies, Tutorial Classes, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a) Understand the treatment of underwriting of shares.
b) Comprehend the computation of profit prior to incorporation.
c) Know the valuation of intangible assets.
d) Know the valuation of shares.
e) Prepare the financial statements of companies as per companies act, 2013.

Syllabus:	Hours
Module No. 1: Underwriting of Shares	**10**

Introduction -Meaning of Underwriting - SEBI regulations regarding underwriting; Underwriting commission. Underwriter - functions - Advantages of Underwriting,
Types of underwriting - Marked and Unmarked Applications -Determination of Liability in respect of underwriting contract - when fully underwritten and partially underwritten - with and without firm underwriting problem.

Module No. 2: Profit Prior to Incorporation	**10**

Introduction - Meaning - calculation of sales ratio - time ratio - weighted ratio - treatment of capital and revenue expenditure - Ascertainment of pre-incorporation and post- incorporation profits by preparing statement of Profit and Loss and Balance Sheet as per schedule III of companies Act, 2013.

Module No. 3 Valuation of Intangible Assets	**10**

Introduction - Valuation of Goodwill -factors influencing goodwill, circumstances of valuation of goodwill- Methods of Valuation of Goodwill: Average Profit Method, Capitalization of average Profit Method, Super Profit Method, Capitalization of Super Profit Method, and Annuity Method-Problems. Brand valuation and Intellectual Property Rights (IPR).

Module No. 4: Valuation of Shares	**10**

Introduction - Meaning - Introduction - Need for Valuation - Factors Affecting Valuation - Methods of Valuation: Intrinsic Value Method, Yield Method, Earning Capacity Method, Fair Value of shares(DCC). Rights Issue and Valuation of Rights Issue, Valuation of Warrants.

Module 5: Financial Statements of Companies	**16**

Statutory Provisions regarding preparation of financial statements of companies as per schedule III of companies act,2013 and IND AS-1 - Treatment of Special Items - Tax deducted at source - Advance payment of Tax - Provision for Tax - Depreciation - Interest on debentures - Dividends - Rules regarding payment of dividends - Transfer to Reserves - Preparation of Statement of profit and loss and Balance Sheet.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 3.2
Name of the Course: Business Statistics

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs

Pedagogy: Classroom lectures, Case studies, Tutorial Classes, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a. Familiarizes statistical data and descriptive statistics for business decision-making.
b. Comprehend the measures of variation and measures of skewness.
c. Demonstrate the use of probability and probability distributions in business.
d. Validate the application of correlation and regression in business decisions.
e. Show the use of index numbers in business.

Syllabus:	Hours
Module No. 1: Statistical Data and Descriptive statistics.	10

Nature and Classification of data: Univariate, bivariate and multivariate data; Measures of Central Tendency: Mathematical averages including arithmetic mean, Properties and applications. Positional Averages -Mode and Median (including graphic determination).

Module No. 2: Measures of Variation: and Skewness	12

Measures of Variation: absolute and relative. Range, quartile deviation, mean deviation, standard deviation, and their coefficients, Properties of standard deviation/ variance.
Skewness: Meaning, Measurement using Karl Pearson and Bowley's measures; concept of Kurtosis .

Module No. 3: Probability Distributions	14

Theory of Probability. Approaches to the calculation of probability; Calculation of event Probabilities. Addition and multiplication laws of probability (Proof not required); Conditional probability and Bayes' Theorem (Proof not required)- Expectation and variance of a random variable - Probability distributions - Binomial distribution: Probability distribution function, Constants, Shape, Fitting of binomial distribution - Poisson distribution: Probability function, (including Poisson approximation to binomial distribution), Constants, Fitting of Poisson distribution - Normal distribution: Probability distribution function, Properties of normal curve, Simple problems.

Module No. 4: Correlation and Regression Analysis	12

Correlation Analysis: Meaning of Correlation: - types of correlation- Positive and negative correlation-simple, partial, and multiple correlation. linear and Non-linear correlation and Scatter diagram, Pearson's co-efficient of Correlation; Correlation and

Probable error; Spearman's Rank Correlation co-efficient. -problems.

Regression Analysis: meaning and definition- regression lines, Regression equations and estimation; Properties of regression coefficients; Relationship between Correlation and Regression coefficients- problems.

Module 5: Index Numbers **8**

Meaning and uses of index numbers; Construction of index numbers: Fisher's ideal index number with Time Reversal and Factor Reversal Tests. Construction of consumer price indices Using Aggregative Expenditure method and Family Budget method .

Skill Development Activities:

1. Application of MS Excel Functions in statistical decision making and studentsshould submit output of the same.
2. Collect the age statistics of 10new married couples calculate Correlation coefficient.
3. Recall the use of probability theory in business.
4. Identify the applicability of correlation and regression in business decisionmaking.
5. Construct consumer price indices with imaginary figures.
6. Any other activities, which are relevant to the course.

Text Books:

1. Gupta, S.P., and Archana Agarwal. Business Statistics, Sultan Chand and Sons,New Delhi.
2. Vohra N. D., Business Statistics, McGraw Hill Education.
3. Gupta, S.C. Fundamentals of Statistics. Himalaya Publishing House.
4. Anderson, Sweeney, and Williams, Statistics for Students of Economics and Business, Cengage Learning.
5. CB Gupta
6. DN Elhance Fundamentals of statistics
7. Sen Chetty and Kapoor mathematical statistics

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 3.3
Name of the Course: Cost Accounting

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs

Pedagogy: Classrooms lecture, Case studies, Tutorial classes, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to

a) Understand concepts of cost accounting & Methods of Costing.
b) Outline the Procedure and documentations involved in procurement of materials& compute the valuation of Inventory.
c) Make use of payroll procedures & compute idle and over time.
d) Discuss the methods of allocation, apportionment & absorption of overheads.
e) Prepare cost sheet & discuss cost allocation under ABC.

Syllabus:	**Hours**
Module No. 1: Introduction to Cost Accounting	**12**

Introduction- Meaning and definition- Objectives, Importance and Uses of Cost Accounting, Difference between Cost Accounting and Financial Accounting; Various Elements of Cost and Classification of Cost; Cost object, Cost unit, Cost driver, cost centre; Cost reduction and Cost control; Methods and Techniques of Costing (Meanings Only); Use of IT in Cost Accounting; Limitations of Cost Accounting; Cost Sheet: Meaning and Cost heads in a Cost Sheet, Presentation of Cost Information in Cost Sheet . Problems on Cost Sheet, Tenders and Quotations.

Module No. 2: Material Cost	**12**

Materials: Meaning, Importance and Types of Materials - Direct and Indirect Material Materials material control. - Inventory control Technique of inventory control, problems on level setting and EOQ. Procurement- Procedure for procurement of materials and documentation involved in materials accounting - Material Storage: Duties of Store keeper, pricing of material issues, preparation of Stores Ledger Account -FIFO, LIFO, Simple Average Price and Weighted Average Price Methods - Problems.

Module No. 3: Employee Cost	**10**

Introduction - Employee Cost - types of labour cost -Labour Cost Control - time keeping and time booking and Payroll Procedure -Preparation of Payroll: Idle Time Causes and Treatment of Normal and Abnormal Idle time, Over Time Causes and Treatment -Labour Turnover- Meaning, Reasons and Effects of Labour turnover. Methods of Wage Payment: Time rate system and piece rate system, and the Incentive schemes- Halsey plan, Rowan plan and Taylor differential piece rate system-problems.

Module No. 4: Overheads Cost	**12**
Introduction- Meaning and Classification of Overheads; Accounting and Control of Manufacturing Overheads: Estimation and Collection, Cost Allocation, Apportionment, Re-apportionment and Absorption of Manufacturing Overheads; Problems on Primary and Secondary overheads distribution using Reciprocal Service Methods (Repeated Distribution Method and Simultaneous Equation Method); Absorption of Overheads: Meaning and Methods of Absorption of Overheads; Problems on Machine Hour Rate.	
Module No. 5: Reconciliation of Cost and Financial Accounts	**l0**
Introduction - meaning of reconciliation, Reasons for differences in Profits under Financial and Cost Accounts; Procedure for Reconciliation - Ascertainment of Profits as per Financial Accounts and Cost Accounts and Reconciliation of Profits of both sets of Accounts - Preparation of Reconciliation Statement - Problems.	
Skill Developments Activities: 1. Visit any Manufacturing entity, collect the method of inventory valuation adopted & procedure involved in procuring inventory. 2. Draw the format of five documents used for material accounting 3. Prepare dummy Payroll with imaginary figures. 4. Visit any large-scale organization, identify the techniques used for controlling administrative, Selling & distribution overheads. 5. Visit any manufacturing entity and collect the cost date and prepare the cost sheet. 6. Any other activities, which are relevant to the course.	
Text Books: 1. Charles T. Horngren, Srikant M. Datar, Madhav V. Rajan, Cost Accounting:A Managerial Emphasis, Pearson Education. 2. Jawahar Lal, Cost Accounting., McGraw Hill Education 3. Madegowda J, Cost Accounting, HPH. 4. Rajiv Goel, Cost Accounting, International Book House 5. Jain, S.P. and K.L. Narang. Cost Accounting: Principles and Methods. Kalyani Publishers 6. Arora, M.N. Cost Accounting - Principles and Practice, Vikas Publishing House, New Delhi. 7. Maheshwari, S.N. and S.N. Mittal. Cost Accounting: Theory and Problems. Shri Mahavir Book Depot, New Delhi. 8. Iyengar, S.P. Cost Accounting, Sultan Chand & Sons 9. Mariyappa B Cost Accounting, HPH Note: Latest edition of text books may be used.	

3.4 Curriculum of Artificial Intelligence will be given by KSHEC

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code: B.Com. 3.5 (OEC)

Name of the Course: Advertising Skills

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3 Hrs**	**42 Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion & Seminar etc.,

Course Outcomes: On successful completion of the course, the students will be able to

a. Familiarize with advertising concepts.
b. Able identify effective media choice for advertising.
c. Develop ads for different media.
d. Measure the advertising effectiveness.
e. Analyze the role of advertising agency.

Syllabus:	**Hours**
Module No. 1: Introduction	**10**
Communication Process; Advertising as a tool of communication; Meaning, nature and importance of advertising; Types of advertising; Advertising objectives. Audience analysis; Setting of advertising budget: Determinants and maior methods.	
Module No. 2: Media Decisions	**07**
Major media types - their characteristics, internet as an advertising media, merits and demerits; Factors influencing media choice; media selection, media scheduling, Advertising through the Internet-media devices.	
Module No. 3: Message Development	**08**
Advertising appeals, Advertising copy and elements, Preparing ads for different media	
Module No. 4: Measuring Advertising Effectiveness	**10**
Evaluating communication and sales effects; Pre- and Post-testing techniques	
Module No. 5: Advertising Agency	**07**
a) Advertising Agency: Role, types and selection of advertising agency. b) Social, ethical and legal aspects of advertising in India.	

Skill Development Activities:

1. Analyze the audience feedback on advertisement of FMCG.
2. List out any ten products/ services advertised through internet.
3. Design any two ads for print media.
4. Examine the legal aspects of advertising in India and submit the report.
5. Any other activities, which are relevant to the course.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 3.5 (OEC)
Name of the Course: Entrepreneurship Skills

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs

Pedagogy: Classrooms lecture, Case studies, Group discussion & Seminar etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a. Discover their strengths and weaknesses in developing the entrepreneurial mind-set.
b. Identify the different Government Institutions/Schemes available for promoting Entrepreneurs.
c. Understand the various aspects to set-up an Enterprises.
d. Familiarise Mechanism of Monitoring and maintaining an Enterprises.
e. Know the various features for successful/ unsuccessful entrepreneurs.

Syllabus:	**Hours**
Module No. 1: Introduction	10
Need of becoming entrepreneur- ways to become a good entrepreneur-Enabling environment available to become an entrepreneur. Self-discovery, Idea Generation-Idea Evaluation-Feasibility analysis- Finding team-Preparation of business model.	
Module No. 2: Promoting Entrepreneur	08
Introduction-Different Government institutions/ schemes promoting entrepreneurs : Gramin banks, PMMY-MUDRA Loan, DIC, SIDA, SISI, NSIC, and SIDO, etc.,	
Module No. 3: Enterprise Set-up	08
Introduction - Ways to set up an enterprise and different aspects involved: legal compliances, marketing aspect, budgeting etc.,	
Module No. 4: Monitoring and Maintaining an Enterprise	10
Introduction - Day to day monitoring mechanism for marinating an enterprise-Different Government Schemes supporting entrepreneurship.	
Module No. 5: Caselets Discussion	06
Examples of successful and unsuccessful entrepreneurship of MUDRA Loan, Gramin banks, SISI and NSIC etc.,	

Skill Development Activities:

1. List out the discovery and evaluation of viable business ideas for new venture creation.
2. Practice critical talents and traits required for entrepreneurs such as Problem solving, creativity, communication, business math, sales, and

Curriculum of IV **Semester Courses**

Advanced Corporate Accounting

Costing Methods & Techniques

Business Regulatory Framework

Constitution of India (curriculum will be given by KSHEC)

Sports/ NCC/ NSS/Others (if any)

1. Business Ethic

Or

2. Corporate Governance

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code: B.Com. 4.1

Name of the Course: Advanced Corporate Accounting

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs

Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a) Know the procedure of redemption of preference shares.
b) Comprehend the different methods of Mergers and Acquisition of Companies
c) Understand the process of internal reconstruction.
d) Prepare the liquidators final statement of accounts.
e) Understand the recent developments in accounting and accountin 2; standards.

Syllabus:	Hours
Module No. 1: Redemption of Preference Shares	10

Meaning – legal provisions – treatment regarding premium on redemption – creation of Capital Redemption Reserve Account- Fresh issue of shares – Arranging for cash balance for the purpose of redemption – minimum number of shares to be issued for redemption - issue of bonus shares – preparation of Balance sheet (Schedule III to Companies Act2013) after redemption.

Module No. 2: Mergers and Acquisition of Companies	16

Meaning of Amalgamation and Acquisition – Types of Amalgamation – Amalgamation in the nature of Merger – Amalgamation in the nature of Purchase - Methods of Calculation of Purchase Consideration (Ind AS 103), Net asset Method - Net Payment Method, Accounting for Amalgamation (Problems on pooling of interest method and purchase method) – Journal Entries and Ledger Accounts in the Books of Transferor Company and Journal Entries in the books of Transferee Company – Preparation of Balance Sheet after Merger. (Schedule III to Companies Act 2013).

Module No. 3: Internal Reconstruction of Companies	10

Meaning of Capital Reduction; Objectives of Capital Reduction; Provisions for Reduction of Share Capital under Companies Act, 2013. Forms of Reduction. Accounting for Capital Reduction. Problems on passing Journal Entries, preparation of Capital Reduction Account and Balance sheet after reduction (Schedule III to Companies Act 2013).

Module No. 4: Liquidation of Companies	12

Meaning of Liquidation, Process, Modes of Winding up – Compulsory Winding up, Voluntary Winding up and winding up subject to Supervision by Court. Order of payments in the event of Liquidation. Liquidator's Statement of Account. Liquidator's remuneration. Problems on preparation of Liquidator's Statement of Account.

Module No. 5: Recent Developments in Accounting and Accounting standards.
08

Human Resource Accounting - Environmental Accounting Discloser as per Global Reporting Initiative (GRI) Reporting of variables - Social Responsibility Accounting, Indian Accounting Standards- Meaning- objectives-Significance of Accounting standards in India- Process of setting Accounting Standards in India- List of Indian accounting standards. (IND AS). ICA vs NFRA

Skill Development Activities:

1. List out legal provisions in respect of Redemption of Preference shares.
2. Calculation of Purchase consideration with imaginary figures.
3. List any five cases of amalgamation in the nature of merger or acquisition of JointStock Companies.
4. List out legal provisions in respect of internal reconstruction.
5. List out any five Indian Accounting Standards.
6. Any other activities, which are relevant to the course.

Text Books:

1. Arulanandam & Raman ; Corporate Accounting-II, HPH
2. Anil Kumar.S Rajesh Kumar .V and Mariyappa .B Advanced Corporate Accounting, HPH
3. Dr. Venkataraman. R - Advanced Corporate Accounting
4. S.N. Maheswari , Financial Accounting, Vikas publishing
5. Soundarajan A & K. Venkataramana, Advanced Corporate Accounting, SHBP.
6. RL Gupta, Advanced Accountancy, Sultan Chand
7. K.K Verma - Corporate Accounting.
8. Jain and Narang, Corporate Accounting.
9. Tulsian, Advanced Accounting,
10. Shukla and Grewal - Advanced Accountancy, Sultan Chand
11. Srinivas Putty, Advanced Corporate Accounting, HPH.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code: B.Com. 4.2

Name of the Course: Costing Methods and Techniques

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs

Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a) The method of costing applicable in different industries.
b) Determination of cost by applying different methods of costing.
c) Prepare flexible and cash budget with imaginary figures
d) Analyse the processes involved in standard costing.
e) Familiarize with the Activity Based Costing and its applications.

Syllabus:	Hours
Module No. 1: Job and Contract Costing	**12**

Job Costing: Meaning, prerequisites, job costing procedure, Features, objectives, applications, advantages and disadvantages of Job costing, Job cost sheet- simple problems.

Contract Costing: Meaning, features of contract costing, applications of contract costing, similarities and dissimilarities between job costing and contract costing, recording of contract costs, meaning of terms used in contract costing; treatment of profit on incomplete contracts-Problems.

Module No. 2: Process and Service Costing	**12**

Process costing: Meaning, features and applications of Process Costing; comparison between Job Costing and Process Costing, advantages and disadvantages of process costing; treatment of process losses and gains in cost accounts; preparation of process accounts.

Service costing: Introduction to service costing; Application of Service costing; Service costing v/s product costing; Cost units for different service sectors; Service cost statement; Determination of costs for different service sectors - Transport services, hospitals and educational institutions-problems on preparation of service cost statements for these service sectors.

Module No. 3: Activity Based Costing	**10**

Introduction - Weakness of conventional costing system - concept of ABC - Characteristics of ABC - Kaplan and Cooper's Approach - cost drivers and cost pools
- allocation of overheads under ABC -- Steps in the implementation of ABC - Benefits from adaptation of ABC system - difficulties faced by the industries in the successful implementation of ABC - Problems.

Module 4: Marginal Costing	**12**

Meaning and Definition of marginal cost, marginal costing, features of marginal costing- terms used in marginal costing - P/V ratio, BEP, Margin of Safety, Angle of Incidence. Break Even Analysis assumptions and uses. Break Even Chart. (Theory). Problems on CVP analysis.

Module 5: Budgetary Control and Standard Costing **10**

Budgetary Control Introduction - Meaning & Definition of Budget and Budgetary Control - Objectives of Budgetary Control - essential requirements of budgetary control - advantages and disadvantages of budgetary control - Types of budgets- Functional Budgets - Cash budget, sales budget, purchase budget and production budget. Fixed and Flexible budgets - Problems on Flexible budget and Cash budget only.

Standard Costing Introduction - Uses and limitations, variance analysis- Material variances, Labour variances and Overhead variances- problems on Material and Labour variances only.

Skill Development Activities:

1. Naming the appropriate method of costing with justification for each of the following Industries-Paper Mill, Printing, Sugar Mill, Rice Mill, Hospital, Oil Refinery, Pickle Manufacturing, KSRTC and Hotel.
2. List out the modern costing tools in accounting field.
3. Prepare flexible Budget and cash budget with imaginary figures
4. Narrate the steps involved in standard costing. System.
5. Prepare a report, which explains the conditions that are necessary for thesuccessful implementation of a JIT manufacturing system.
6. Explain ABC. Illustrate how ABC can be applied.
7. Any other activities in addition to the above, which are relevant to the course.

Text Books:

1. John K Shank and Vijaya Govindarajan; Strategic Cost Management; FreePress Publication; New York
2. S P Jain and K L Narang, Advanced Cost Accounting, Kalyani Publications,
3. Robert S Kaplan and Anthony A Atkinson, Advanced ManagementAccounting, PHI, New Delhi.
4. Shank and Govindrajan, Strategic Cost Management, Simon and Schuster,36 New York.
5. Lin Thomas, Cases and Readings in Strategic Cost Management, McGrawHill Publications, New York.
6. Mariyappa B Methods and Techniques of Costing. HPH.

Note: Latest edition of Text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 4.3
Name of the Course: Business Regulatory Framework

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs	56 Hrs

Pedagogy: Classroom lectures, Case studies, Group discussion, Seminar & field worketc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a) Recognize the laws relating to Contracts and its application in business activities.
b) Acquire knowledge on bailment and indemnification of goods in a contractualrelationship and role of agents.
c) Comprehend the rules for Sale of Goods and rights and duties of a buyer and aseller.
d) Distinguish the partnership laws, its applicability and relevance.
e) Rephrase the cyber law in the present context.

Syllabus:	**Hours**
Module No. 1: Indian Contract Act, **1872**	**12**

Introduction – Definition of Contract, Essentials of Valid Contract, Offer and acceptance, consideration, contractual capacity, free consent. Classification of Contract, Discharge of a contract, Breach of Contract and Remedies to Breach of Contract

Module No. 2: The Sale of Goods Act, 1930	**10**

Introduction - Definition of Contract of Sale, Essentials of Contract of Sale, Conditions and Warranties, Transfer of ownership in goods including sale by a non- owner and exceptions- Performance of contract of sale - Unpaid seller, rights of an unpaid seller against the goods and against the buyer

Module No. 3: Competition and Consumer Laws	**12**

The Competition Act 2002 – Objectives of Competition Act, Features of Competition Act, CAT, Offences and Penalties under the Act, Competition Commission of India.
Consumer Protection Act 2019 – Definitions of the terms – Consumer, Consumer Dispute, Defect, Deficiency, Unfair Trade Practices, and Services, Rights of Consumer under the Act, Consumer Redressal Agencies – District Forum, State Commission and National Commission. Add consumer protection act 2019 contents instead of 1986.

Module No. 4: Economic Laws	**12**

WTO patent rules – Indian Patent Act, 1970 – Meaning and Scope of Intellectual Property Rights (IPR), Procedure to get Patent for Inventions and Non-Inventions.
FEMA 1999 – Objectives of FEMA, Salient Features of FEMA, Definition of Important Terms – Authorized Dealer, Currency - Foreign Currency, Foreign Exchange, Foreign Security.

Module 5: Environment and Cyber Laws	**10**

Environment Protection Act 1986 - Objectives of the Act, Definitions of Important Terms - Environment, Environment Pollutant, Environment Pollution, Hazardous Substance and Occupier, Types of Pollution, Powers of Central Government to protect Environment in India. Cyber Law: Definition, Introduction to Indian Cyber Law, Cyber space and Cyber security.

Skill Development Activities:

1. Discuss the case of "Carlill vs Carbolic Smoke Ball Company" case
2. Discuss the case of "Mohori Bibee v/ s Dharmodas Chose".
3. Discuss any one case law relating to minor.
4. State the procedure for getting patent for 'inventions' and / or 'non-inventions'.
5. List at least 5 items which can be categorized as 'hazardous substance' according to Environment Protection Act.
6. List out any top upcoming jobs in cyber security and examine the skills requiredfor the same.
7. Any other activities, which are relevant to the course.

Text Books:

1. M.C. Kuchhal, and Vivek Kuchhal, Business Law, Vikas Publishing House, New Delhi.
2. Avtar Singh, Business Law, Eastern Book Company, Lucknow.
3. Ravinder Kumar, Legal Aspects of Business, Cengage Learning
4. SN Maheshwari and SK Maheshwari, Business Law, National Publishing House,New Delhi.
5. Aggarwal S K, Business Law, Galgotia Publishers Company, New Delhi
6. Bhushan Kumar Goyal and Jain Kinneri, Business Laws, International Book House
7. Sushma Arora, Business Laws, Taxmann Pulications.
8. Akhileshwar Pathak, Legal Aspects of Business, McGraw Hill Education, 6th Ed.
9. P C Tulsian and Bharat Tulsian, Business Law, McGraw Hill Education
10. Sharma, J.P. and Sunaina Kanojia, Business Laws, Ane Books Pvt. Ltd., New Delhi
11. K. Rama Rao and Ravi S.P., Business Regulatory Framework., HPH 12.

N.D. Kapoor, Business Laws, Sultan Chand Publications

Latest edition of text books may be used.

Constitution of India curriculum will be given by KSHIC

Sports/ NCC/ NSS/ Others (If any) - as per concerned University Guidelines.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 4.6 (OEC)
Name of the Course: Business Ethics

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs

Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,

Course Outcomes: On successful completion of the course, the students will be able to

a. Explain the concepts of business ethics and its approaches.
b. Examine the business and organizational ethics in the present context.
c. Analyze the ethical aspects in marketing and HR areas.
d. Analyze the ethical aspects in finance and IT areas.
e. Examine the impact of globalization on business ethics.

Syllabus:	Hours
Module No. 1: Business Ethics	08
Introduction, Concepts and theories: Introduction, definitions, importance and need for Business ethics, Values and morals. Management and ethics, Normative Theories, - Gandhian Approach, Friedman,.s Economic theory, Kane s Deontological theory, Mill & Bentham,.s Utilitarianism theory.	
Module No. 2: Business & Organizational Ethics	10
The Indian Business scene, Ethical Concerns, LPG & Global trends in business ethics, Business ethics rating in India. Organizations & Organization culture, Types of Organization, Corporate code of ethics -Formulating, Advantages, implementation Professionalism and professional ethics code.	
Module No. 3: Ethical Aspects in Organization - I	08
Marketing ethics and Consumer ethics - Ethical issues in advertising, Criticisms in Marketing ethics, Ethics in HRM: Selection, Training and Development - Ethics at workplace - Ethics in Performance Appraisal.	
Module No. 4: Ethical Aspects in Organization - II	08
Ethics in Finance: Insider trading - Ethical investment - Combating Frauds. Ethical issues in Information Technology: Information Security and Threats - Intellectual Property Rights - Cybercrime.	
Module No. 5: Globalization and Business Ethics	08
Growth of Global Corporations, Factors facilitating Globalisation, Impact of globalization on Indian corporate and social culture, Advantages and disadvantages of MNCs to the Host Country, International codes of Business Conduct, Whistle blowing and its codes.	

Skill Development Activities:

1. The students may be asked to conduct the survey of any two organizations tostudy the ethical practices.
2. List out any five most ethical rating of Indian companies.
3. Collect the information on unethical practices in marketing and HR area.
4. Collect the information on unethical practices in finance and IT area.
5. Analyse and submit the report on the impact of globalization on Indian businesshouses in the context of ethical aspects.
6. Any other activities, which are relevant to the course.

Text Books:

1. Laura P Hartman, T, Perspectives in Business Ethics, Tata McGraw Hill.
2. B. H. Agalgatti & R. P. Banerjee, Business Ethics -Concept & Practice, NiraliPublication.
3. R. P. Banerjee, Ethics in Business & Management, Himalaya Publication
4. Crane, Business Ethics, Pub. By Oxford Press
5. C S V Murthy, Business Ethics, Himalaya Publishing House

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code: B.Com. 4.6 (OEC)

Name of the Course: Corporate Governance

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs

Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a) Identify the importance of corporate governance.
b) Know the rights, duties and responsibilities of Directors.
c) Analyse the legal & regulatory framework of corporate governance.
d) Outline the importance and role of board committee.
e) Understand the major expert committees' Reports on corporate governance.

Syllabus:	Hours
Module No. 1: Corporate Governance	10

Introduction, Its importance, Principles of corporate governance, OECD Principles of corporate governance, Theories of corporate governance-Agency theory and stewardship theory, Models of corporate governance around the world, Need for good corporate governance - Evolution of Corporate Governance – Ancient and Modern Concept - Concept of Corporate Governance, Generation of Value from Performance - Principles of Corporate Governance.

Module No. 2: Corporate and Board Management	10

Corporate Business Ownership Structure - Board of Directors – Role, Composition, Systems and Procedures - Fiduciary relationship - Types of Directors- Promoter/ Nominee/Shareholder/ Independent - Rights, Duties and Responsibilities of Directors; Role of Directors and Executives – Responsibility for Leadership, Harmony between Directors and Executives -Training of Directors- need, objective, methodology - Scope and Responsibilities and competencies for directors - Executive Management Process, Executive Remuneration - Functional Committees of Board - Rights and Relationship of Shareholders and Other Stakeholders.

Module No. 3: Legal and Regulatory Framework of Corporate Governance	08

Need for Legislation of Corporate Governance - Legislative Provisions of Corporate Governance in Companies Act 1956, Securities (Contracts and Regulations) Act, 1956 (SCRA), Depositories Act 1996, Securities and Exchange Board of India Act 1992, Listing Agreement, Banking Regulation Act, 1949 and Other Corporate Laws - Legal Provisions relating to Investor Protection.

Module No. 4: Board Committees and Role of Professionals **08**

Board Committees - Audit Committee, Remuneration Committee, Shareholders' Grievance Committee, other committees - Need, Functions and Advantages of Committee Management -Constitution and Scope of Board Committees - Board Committees' Charter - Terms of Reference and Accountability and Performance Appraisals - Attendance and participation in committee meetings - Independence of Members of Board Committees - Disclosures in Annual Report; Integrity of Financial Reporting Systems - Role of Professionals in Board Committees - Role of Company Secretaries in compliance of Corporate Governance.

Module No. 5: Corporate Governance - Codes and Practices **06**

Introduction - Major Expert Committees' Reports of India - Study of Codes of Corporate Governance - Best Practices of Corporate Governance - Value Creation through Corporate Governance - Corporate Governance Ratings.

Skill Development Activities:

1. Collect the annual reports of any two companies, find out the corporategovernance aspects in the reports.
2. Collect any two companies Board of Directors names and find out their nature of directorship.
3. Prepare report on the applicability of different models of Corporate Governance.
4. Critically compare the recommendations of various corporate governance committee.
5. Any other activities, which are relevant to the course.

Text Books:

1. Bairs N. and D Band, Winning Ways through Corporate Governance, Macmillan London.
2. Charkham J, Keeping Good Company: A Study of Corporate Governance in FiveCountries, Oxford University Press, London.
3. Subhash Chandra Das, Corporate Governance in India – An Evaluation (Third edition), PHI Learning Private Limited.
4. Clark T. and E Monk House, Rethinking the Company, Pitman, London.
5. Fernando A.C, Corporate Governance, Pearson Education.
6. Prentice D.D. and PRJ Holland, Contemporary Issues in Governance, ClarendonPress.
7. Report of the Cadbury Committee on Financial Aspects of CorporateGovernance, London Stock Exchange, London.
8. Report on Corporate Governance, Confederation of India Industries and Bombay.

Note: Latest edition of text books may be used.

1.1 Guidelines For Continuous Internal Evaluation and Semester End Examination

The Members of the Committee deliberated on the framework of Continuous Internal Evaluation (CIE) as well Semester End Examination (SEE) for the courses. The CIE and SEE will carry 40% and 60% weightage each, to enable the course to be evaluated for a total of 100 marks, irrespective of its credits. The evaluation system of the course is comprehensive & continuous during the entire period of the Semester. For a course, the CIE and SEE evaluation will be on the following parameters:

SL No.	Parameters for the Evaluation	Marks
	Continuous Internal Evaluation (CIE)	
1	Assignment (s)	08 Marks
	Seminar (s)	08 Marks
	Attendance *	08 Marks
2	Internal Assessment Tests (IAT)	16 Marks
	Total of CIE (A)	40 Marks
3	Semester End Examination (SEE) (B)	60 Marks
	Total of CIE and SEE (A + B)	100 Marks

*** Attendance**

Up to 74.99	O Mark
75-77.99	02 Marks
78-80.99	03 Marks
81-83.99	04 Marks
84-86.99	05 Marks
87-89.99	06 Marks
90-92.99	07 Marks
93 and above	08 Marks

a. **Continuous & Comprehensive Evaluation** (CCE): The CCE will carry a maximum of 16 % weightage (16 marks) of total marks of a course. Beforethe start of the academic session in each semester, a faculty member should choose for his/her course, minimum of four of the following assessment methods with four marks each:

I. lndividual Assignments
II. Seminars/Class Room Presentations/ Quizzes
III. Group Discussions /Class Discussion/ Group Assignments
Iv. Case studies/Case lets
v. Participatory & Industry-Integrated Learning/ Filed visits
vi. Practical activities / Problem Solving Exercises
VII. Participation in Seminars/ Academic Events/Symposia, etc.
vui. Mini Projects/Capstone Projects
IX. Any other academic activity

b. Internal Assessment Tests (IAT): The IAT will carry a maximum of 40% weightage (40 marks) of total marks of a course, under this component, two tests will have to be conducted in a semester for 34 marks each and thesame is to be scaled down to 16 marks each. Standard format is given below.

c. In case of 50 percent of CIE weightage courses, faculty members can choose assessments methods accordingly for the required marks as mentioned above.

Suggestive Template for IAT

Internal Assessment Test: Bachelor of Commerce (B.Com.)

Course Code: Name of the Course:
Duration: 1½ Hours Total Marks: 34

SECTION-A

I. Answer any two of the following questions. Questions are asked on Remembering.

(2 x 2 = 04)

1.
2.
3.

SECTION- B

II. Answer any two of the following questions. Questions are asked on Understanding.

(05 x 2= 10)

4.
5.
6.

SECTION- C

I. Answer any two of the following questions. Questions are asked on Understanding and Applying.

(10 x 2= 20)

7.
8.
9.

.....

Note: Internal Test question papers format is prepared based on Revised Bloom's Taxonomy.
(https://www.apu.edu/live data/files/333/blooms taxonomy action verbs.pdf)

Semester End Examination (SEE):

The Semester End Examination for all the courses for which students who get registered during the semester shall be conducted. SEE of the course shall beconducted after fulfilling the minimum attendance requirement as per the Universities/Institutes ' norms. The Members of the Committee also deliberated on the framework of Semester End Examination (SEE) and suggested to give autonomy to Board of Studies (BOS) of Universities/Institutes to have their own Framework. The BOS of the Universities/Institutes shall prepare the SEE Framework by considering the 'Revised Bloom's Taxonomy', since the courses are designed basedon Outcome Based Education.

Instructions for Question Paper Setters:

1. The question paper setter shall use Revised Bloom's Taxonomy Action Verbs, since the students answers are assessed based on course outcomes. (As a part of OBE).

2. The question paper setter shall set the two/three questions from each module as per the pattern.

3. Each module can have sub-questions.
   Example:

1.	A	(02 Marks)
	B…… …..	(05 Marks)
	C……	(10 Marks)

4. While setting sub-questions, question paper setters can assign the weightage of the marks as per the need/importance of the questions, but it should not exceed the maximum marks of the module.

DAVANGERE UNIVERSITY
QUESTION PAPER PATTERN W.E.F. 2021-22 ONWARDS
SEMESTER END EXAMINATIONS
B.COM. PROGRAM
Name of the Course: .....

Time: 03 Hrs. Max. Marks: 60

Note: Answer any FIVE full questions, choosing one full question from each module.

Module No. 01

1. 12 Marks

OR

2. 12 Marks

Module No. 02

12 Marks

12 Marks

Module No. 03

12 Marks

OR

12 Marks

Module No. 04

7. 12 Marks

OR

8. 12 Marks

Module No. 05

Skill Enhancement Courses/Generic/OECs	
SL No.	**Name of the Courses**
1	Community Project Reports & Viva Voce
2	Company Financial Statements Analysis and Reports
3	Internship in Audit firms
4	Industry Analysis and Reports
5	E-Commerce
6	Collective Bargaining & Negotiation Skills in Business
7	Training & Development
8	Stock Market Operations
9	Communication & Documentation
10	New Venture Planning and Development
11	Personal Tax Planning and Tax Management
12	Cyber Security
13	Leadership & Team Development
14	Event Management
15	Basics of Spreadsheets modelling
16	Advanced Spreadsheets modelling
17	Advertisement & Personal Selling
18	Managing Digital Platforms
19	ERP Applications
20	Business Communication
21	Life Skills
22	Managerial Skills
23	Personal Financial Planning
24	Accounting for Everyone
25	Financial Literacy
26	Financial Environment
27	Public Policy
28	Investment in Stock Markets
29	Good Governance
30	Sustainable Development Goals
31	Risk Management
32	Digital Marketing
33	Others (if any)

Mahajana Education Society (R.)
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SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

BOARD OF STUDIES

DEPARTMENT OF COMMERCE

UG ☑

PG ☐

NEP Syllabi for V and VI Semester

2023-24

DEPARTMENT OF COMMERCE

Motto:

Simply Better

Vision:

Imparting contemporary education to make the students well versed in the domain of Business and honing the students to mount high with the prevailing corporate scenario.

Mission:

Giving a practical edge to the curriculum by building life skills through service oriented programs and to pursue knowledge through academics, extracurricular activities to develop the student's personality with a strong value base.

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SBRR MAHAJANA FIRST GRADE COLLEGE
(Autonomous)

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College with Potential for Excellence

BCOM -Programme Outcomes

PO 1	**Domain Knowledge-** Inculcation of fundamental concepts, principles and application of the same.
PO 2	**Problem Analysis-** Identifying and analyzing the problems in the field of business.
PO 3	**Design & Development of Solutions-** Adapting INDAS, Companies act, designing the costing techniques and methods, marketing strategies, business and tax planning along with its approaches.
PO 4	**Research and Investigation-** Research methodology with SPSS, probabilities and testing of hypothesis.
PO 5	**Modern Techniques & Tools**- Technology based education towards revolutionizing the skills.
PO 6	**Domain & Society-** Inculcating positive impact on the society and making accountable by imparting the significance and its applicability.
PO 7	**Environment & Sustainability-** Capable of handling the uncertainties to sustain the current challenges.
PO 8	**Moral & Ethical Values-** Inculcate ethical values in aiming towards Corporate social responsibility.
PO 9	**Individual & Teamwork-** Assimilate the quality of personnel through adoption of scientific management studies and curtail any flaws without conflicts.
PO 10	**Communication-** Stream light the thoughts to reach the goals by creating tactical outreach plans.
PO 11	**Project Management & Finance-** Create opportunities through well planned diversified projects.
PO 12	**Life Long Learning-** Develop inquisitiveness in continuous and self-motivated approach towards grooming the global leaders.

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Department of Commerce
Board of Studies 2023-2024

Sl. No.	Category	Name	Designation	Address for Communication
1	Chairman	Major. B.R. Nikil	Assistant Professor and HOD	Department of Commerce SBRR Mahajana First Grade College, Jayalakshmipuram, Mysore -12
2	Faculty of the Department	Smt. Rekha. B	Assistant Professor	Department of Commerce SBRR Mahajana First Grade College, Jayalakshmipuram, Mysore -12
		Smt. Vasagi S	Assistant Professor	Department of Commerce SBRR Mahajana First Grade College, Jayalakshmipuram, Mysore -12
		Smt. Shambhavi P Bhounsle	Assistant Professor	Department of Commerce SBRR Mahajana First Grade College, Jayalakshmipuram, Mysore -12
		Dr. N Roopesh Kumar	Associate Professor and Head of the Department	Department of Commerce Mahajana PG Center, Mysore.
3	Two Experts from Other University	Dr. Srinivas K T	Associate Professor & Chairman	Department of Studies in Commerce, Davangere University, Davangere.
		Dr. Parameshwara	Associate Professor	Department of Commerce, Mangalore University, Konaje Mangalore.
4	Nominee by the Vice Chancellor	Prof. Nagaraja N	Professor	DoS in Commerce, University of Mysore, Manasagangothri, Mysuru-570006.
5	Alumnus	R. Rajesh	Chartered Accountant	B S Ravikumar & Associates, Mysuru,
6	Industrial Expert	Smt. Nandini R Muttur	Partner	Geartech Solutions, Hebbal Industrial Area, Mysuru

Scheme of Teaching & Evaluation for B.Com.

Semester V								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L : T : P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
1	233516	Financial Management	DSC-13	4:0:0	60	40	100	4
2	233517	Income Tax Law and Practice-I	DSC-14	4:0:0	60	40	100	4
3	233518	Principles and Practice of Auditing	DSC-15	4:0:0	60	40	100	4
4	23DSECOM01 23DSECOM03	Elective 1	DSE - 1	3:0:0	60	40	100	3
5	23DSECOM02 23DSECOM04	Elective 2	DSE - 2	3:0:0	60	40	100	3
6	23VOCCOM01	GST- Law & Practice	Vocational - 1	2:0:1	60	40	100	3
Sub –Total (D)					**360**	**240**	**600**	**21**

Elective Groups and Courses:

Discipline Specific Electives – V Semester										
Sl. No.	Course Code	Accounting	Course Code	Finance	Course Code	Marketing	Course Code	Human Resources	Course Code	Information Systems
1	**23DSECOM01**	Indian Accounting Standards1	**23DSECOM02**	Financial Institutions and Markets	**23DSECOM04**	Retail Management	**23DSECOM04**	Human Resource Development	**23DSECOM05**	Basics of Business Analytics

Note:

1. Under DSE, Dual Specialization to be offered, students should choose two elective groups from the above elective groups. Same elective groups should be continued in the 6th Semester also.

Semester VI								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L : T : P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
8	233616	Advanced Financial Management	DSC-16	4:0:0	60	40	100	4
9	233617	Income Tax Law and Practice-II	DSC-17	4:0:0	60	40	100	4
10	233618	Management Accounting	DSC-18	4:0:0	60	40	100	4
11	23DSECOM06 23DSECOM08	Elective 1	DSE - 3	3:0:0	60	40	100	3
12	23DSECOM07 23DSECOM09	Elective 2	DSE - 4	3:0:0	60	40	100	3
13	23VOCCOM02	Assessment of Non-Individuals & Filing ofITRs	Vocational -2	2:0:1	60	40	100	3
14	23INTCOM01	Internship/ Projects	SEC - SB	4 to 5 weeks	30	20	50	3
Sub –Total (D)					**390**	**260**	**650**	**24**

Elective Groups and Courses:

Discipline Specific Electives – VI Semester										
Sl. No	**Course Code**	**Accounting**	**Course Code**	**Finance**	**Course Code**	**Marketing**	**Course Code**	**Human Resources**	**Course Code**	**Information Systems**
1	23DSE COM06	Indian Accounting Standards-2	23DSEC OM07	Invest ment Manag ement	23DSECO M08	Custo mer Relati onship Management	23DSE COM09	Cultural Diversity at Work Place	23DSE COM10	HR Analytics

Note:

1. Under DSE, Dual Specialization to be offered, students should choose two elective groups from the above elective groups. Same elective groups should be continued in the 6th Semester also.

V SEMESTER
DISCIPLINE SPECIFIC COURSE-13

Course Code: 233516	**Course Title: Financial Management**
Course Credits: 4 .(L:T:P): 4:0:0	**Teaching Hours/Week: 04 Hours**
Total Contact Hours: 60 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course objective: To acquaint the students with the knowledge of financial planning and results.

Course Outcomes:

- **CO1-** Know the role of financial managers effectively in an organization.
- **CO2-** Knowledge of knowing the techniques for time and value of money.
- **CO3-** Imparting the skills of financial decisions.
- **CO4-** Gain the knowledge of investment and expenses.

Syllabus:	**Hours**
Module No. 1: Introduction to Financial Management	**12**
Introduction –Meaning of Finance, Finance Function, Objectives of Finance function, Organization of Finance function -Meaning and definition of Financial Management; Goals of Financial Management, Scope of Financial Management, Functions of Financial Management, Role of Finance Manager in India. Financial planning-- Meaning –Need – Importance -Steps in financial Planning – Principles of a sound financial plan and Factors affecting financial plan.	
Module No. 2: Time Value of Money	**12**
Introduction – Meaning of time value of money-time preference of money-Techniques of time value of money: Compounding Technique-Future value of Single flow, Multiple flow and Annuity -Discounting Technique-Present value of Single flow, Multiple flow – and Annuity. Doubling Period- Rule 69 and 72.	
Module No. 3: Financing Decision	**12**
Introduction-Meaning and Definition of Capital Structure, Factors determining the Capital Structure, sources of finance Concept of Optimum Capital Structure, EBIT-EPS Analysis- Problems. Leverages: Meaning and Definition, Types of Leverages- Operating Leverage, Financial Leverage and Combined Leverages. Problems.	
Module No. 4: Investment Decision	**12**
Introduction-Meaning and Definition of Capital Budgeting, Features, Significance – Steps in Capital Budgeting Process. Techniques of Capital budgeting: Traditional Methods – Pay Back Period, and Accounting Rate of Return – DCF Methods: Net Present Value Internal Rate of Return and Profitability Index- Problems.	

Module 5: Working Capital Management	**12**
Introduction- Meaning and Definition, types of working capital, operating cycle, Determinants of working capital needs – Estimation of working capital requirements. dangers of excess and inadequate working capital, Merits of adequate working capital, Sources of working capital. Cash Management, Receivable Management, and Inventory Management (Concepts only).	

Skill Development Activities:

1. Visit the Finance Department of any organization and collect and record theFunctions and Responsibilities of Finance Manager.
2. As a finance manager of a company advice the management in designing anappropriate Capital Structure.
3. Evaluate a capital investment proposal by using NPV method with imaginaryfigures.
4. Illustrate with imaginary figures the compounding and discounting techniquesof time value of money.
5. Estimate working capital requirements of an organization with imaginary figures.
6. Any other activities, which are relevant to the course.

Text Books:

1. I M Pandey, Financial management, Vikas publications, New Delhi.
2. Abrish Guptha, Financial management, Pearson.
3. Khan & Jain, Basic Financial Management, TMH, New Delhi.
4. S N Maheshwari, Principles of Financial Management, Sulthan Chand & Sons,New Delhi.
5. Chandra & Chandra D Bose, Fundamentals of Financial Management, PHI,New Delhi.
6. B.Mariyappa, Financial Management, Himalaya Publishing House, NewDelhi.
7. Ravi M Kishore, Financial Management, Taxman Publications
8. Prasanna Chandra, Financial Management, Theory and Practice, Tata McGraw Hill.

Note: Latest edition of text books may be used.

Web links:

https://www.managementstudyguide.com/financial-management.htm
https://www.oracle.com/in/erp/financials/financial-management
https://en.wikipedia.org/wiki/Financial_management

Course Articulation Matrix - 233516

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	1	-	-	-	1	-	1	1	1	1	1
CO2	2	2	1	1	2	1	-	1	2	2	2	3
CO3	2	2	2	2	2	1	1	1	2	1	2	3
CO4	2	2	2	2	2	1	1	1	2	1	2	3
Wtd. Avg.	**2**	**1.75**	**1.6**	**1.6**	**2**	**2**	**1**	**1**	**1.75**	**1.25**	**1.75**	**2.5**

V SEMESTER
DISCIPLINE SPECIFIC COURSE-14

Course Code: 233517	**Course Title: Income Tax Law and Practice - I**
Course Credits: 4 .(L:T:P): 4:0:0	**Teaching Hours/Week: 04 Hours**
Total Contact Hours: 60 Hours	**Formative Assessment Marks: 40**
Exam Duration: 2 1/2 Hours	**Semester End Examination Marks: 60**

Course Objective: To gain the knowledge of assessment of tax payments.

Course Outcomes:
CO1- Knowledge of the concepts of income tax.
CO2- Provisions for determining the residential status of an Individual.
CO3- Gain the knowledge of individual and house income.
CO4- Knowledge of capital gains.

Syllabus:	**Hours**
Module No. 1: Basic Concepts of Income Tax	**12**
Introduction –Meaning of tax-, types of taxes, cannons of taxation. Brief history of Indian Income Tax, legal framework of taxation, Important definitions, assessment, assessment year, previous year including exceptions, assesses, person, income, casual income, Gross total income, Total income, Agricultural income, scheme of taxation, – Exempted incomes of an individual under section 10.	
Module No. 2: Residential Status and Incidence of Tax	**10**
Introduction – Residential status of an individual. Determination of residential status of an individual. Incidence of tax or Scope of Total income. Problems on computation ofGross total Income of an individual.	
Module No. 3: Income from Salary	**14**
Introduction - Meaning of Salary -Basis of charge Definitions–Salary, Perquisites and profits in lieu of salary - Provident Fund –Transferred balance. - Retirement Benefits – Gratuity, pension and Leave salary. Deductions and Problems on Computation of Taxable Salary.	
Module No. 4: Income from House Property	**14**
Introduction - Basis for charge - Deemed owners -House property incomes exempt fromtax, composite rent and unrealized rent. Annual Value –Determination of Annual Value - Deductions from Annual Value - Problems on Computation of Income from House Property.	
Module No. 5: Capital Gains	**10**
Introduction - Basis for charge - Capital Assets - Types of capital assets – Transfer - Computation of capital gains – Short term capital gain and Long term capital gain - Exemption under section 54, 54B, 54EC, 54D, 54F, and 54G. Problems covering the above sections.	

Skill Developments Activities:

1. Prepare a slab rates chart for different Individual assesses.
2. Visit any Chartered Accountant Office Collect and record the procedure involved in filing the Income tax returns of an Individual.
3. List out any 10 Incomes exempt from tax of an Individual.
4. Prepare the list of perquisites received by an employee in an organization.
5. Identify and collect various enclosures pertaining to Income tax returns of an individual.
6. Any other activities, which are relevant to the course.

Text Books:

1. Mehrotra H.C and T.S.Goyal, Direct taxes, Sahithya Bhavan Publication, Agra.
2. Vinod K. Singhania, Direct Taxes, Taxman Publication Private Ltd, New Delhi.
3. Gaur and Narang, Law and practice of Income Tax, Kalyani Publications, Ludhiana.
4. Bhagawathi Prasad, Direct Taxes.
5. B.Mariyappa, Income tax Law and Practice-I, Himalaya Publishing House. NewDelhi.s
6. Dr. Saha, Law and Practice of Income Tax, Himalaya Publishing House.

Note: Latest edition of text books may be used.

Weblinks: https://www.sultanchandandsons.com/book/575/income-tax-%E2%80%93-law-and-practice
https://www.gacrkl.ac.in/studymaterial/gacr-ug-com-c6.pdf
https://www.icsi.edu/docs/webmodules/Publications/4.%20Tax%20Laws%20and%20Practice.

Course Articulation Matrix - 233517

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	1	1	-	-	1	-	1	-	-	-	1
CO2	2	1	-	-	-	1	1	1	-	1	-	1
CO3	2	2	2	1	2	1	1	1	1	1	2	2
CO4	2	2	2	1	2	1	2	1	1	2	2	2
Wtd. Avg.	**2**	**1.5**	**1.6**	**1**	**2**	**1**	**1.3**	**1**	**1**	**1.3**	**2**	**1.5**

V SEMESTER
DISCIPLINE SPECIFIC COURSE-15

Course Code: 233518	**Course Title: Principles and Practice of Auditing**
Course Credits: 4 .(L:T:P): 4:0:0	**Teaching Hours/Week: 04 Hours**
Total Contact Hours: 60 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objective: To analyze and assess the differences between the accounting standards.

Course Outcomes:

CO1- Analyze the framework of auditing.
CO2- Examine the risk assessment and internal control in auditing.
CO3- Comprehend the relevance of IT in audit and audit sampling for testing.
CO4- Knowledge of auditing and reporting in the companies.

Syllabus:	**Hours**
Module No. 1: Introduction to Auditing	**10**
Introduction – Meaning and Definition – Objectives– Types of Audit– Merits and Demerits of Auditing – Relationship of audit with other disciplines. Preparation before commencement of new audit - Working Papers -Audit Note Book, Audit Programme Qualities of an Auditor – Audit planning – Audit strategy —Audit Engagement – Audit -Audit Documentation - Audit Evidence – Written Representation.	
Module No. 2: Risk Assessment and Internal Control	**12**
Introduction – Audit risk – Assessment of risk – Internal Control-Meaning and objectives– Internal check- Meaning, objectives and fundamental Principles. Internal check with regards to wage payment, cash sales, and cash purchases.	
Module No. 3: Verification and Valuation of Assets and Liabilities	**14**
Meaning and objectives of verification and valuation – Position of an auditor as regards the valuation of assets- Verification and Valuation of different items of Assets- Land and Building, Plant and Machinery, Goodwill, Investments, Stock in Trade. Liabilities-Bills payable, Sundry Creditors and Contingent liabilities.	
Module No. 4: Company Audit and Audit of other Entities	**12**
Company Auditor: appointment, Qualification, powers, duties and liabilities, professional ethics of an auditor. Other Entities: Audit Procedure of NGOs - Charitable institutions - Educational institutions – Government – Local Bodies – Cooperative societies – hotels – hospitals – clubs & Banks.	

Module 5: Audit Report & Professional Ethics	**12**
Introduction – Meaning – Elements of audit report –Types of audit report - Independent Auditor's report and their illustration; Professional Ethics: Code of Ethics - Professional Accountants in Public practices and business – Fundamental Principles of Professional Ethics.	
Skill Development Activities: 1. Design and develop an audit plan program for a joint stock company 2. List the various documents necessary to be verified in the audit process 3. Draft an audit report (qualified or clean) with imaginary data. 4. Visit an audit firm, write about the procedure followed by them in auditing the books of accounts of a firm. 5. Record the verification procedure with respect to any one fixed asset. 6. Draft an audit program. 7. Any other activities, which are relevant to the course.	
Text Books: 1. ICAI Study Materials on Auditing and Assurance 2. B.N. Tandon, Principles of Auditing, S. Chand and Company, New Delhi. 3. T.R. Sharma, Auditing Principles and Problems, Sahitya Bhawan, Agra. 4. J.M. Manjunatha and others, Auditing and Assurance, HPH. 5. Gupta Karnal, Contemporary Auditing, Tata Mc. Graw-Hill, New Delhi. 6. R.G. Saxena, Principles of Auditing. **Note: Latest edition of text books may be used.**	

Web links: https://www.sultanchandandsons.com/book/209/principles-and-practice-of-auditing
https://www.teachmint.com/tfile/studymaterial/b-com/ppa/principles-practices-of-auditing
http://www.charulathapublications.com/products/auditing-principles-practices

Course Articulation Matrix - 233518

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	1	-	-	-	2	2	2	2	2	1	2
CO2	2	2	2	1	2	1	1	2	2	2	1	2
CO3	2	2	2	1	1	2	1	2	2	2	1	2
CO4	2	2	2	2	2	2	2	2	2	2	1	2
Wtd. Avg.	**2**	**1.75**	**2**	**1.3**	**1.6**	**1.75**	**1.5**	**2**	**2**	**2**	**1**	**2**

V SEMESTER
DISCIPLINE SPECIFIC ELECTIVE

Course Code: 23DSECOM01	**Course Title: Indian Accounting Standards-1**
Course Credits: 3 .(L:T:P): 3:0:0	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objective: To understand the different accounting standards.

Course Outcomes:

CO1- Gain the knowledge of the accounting standards.
CO2- Preparation of the financial statements as Indian Accounting standards.
CO3- Comprehend the requirements of Indian Accounting Standards.
CO4- Understand the Accounting Standards for Items that do not Appear in Financial Statements

Syllabus	**Hours**
Module No. – 1 Introduction to Indian Accounting Standards.	**10**
Introduction- Meaning and Definition of Accounting Standards – Objectives of Accounting Standards – Benefits and Limitations of Accounting Standards – Process of Formulation of Accounting Standards in India – List of Indian Accounting Standards (Ind AS) – Need for Convergence Towards Global Standards– International Financial Reporting Standards -Features and Merits and Demerits of IFRS – Benefits of Convergence with IFRS – Applicability of Ind AS in India.	
Module No. 2 Preparation of Financial Statements (Ind AS 1)	**12**
Frame work for preparation of Financial Statements, presentation of Financial Statement as per Ind AS 1. Statement of Profit and Loss, Balance Sheet, Statement of changes in Equity, statement of Cash /flow and Notes to accounts. Problems on preparation of Statement of Profit and Loss and Balance Sheet as per Schedule III of Companies Act, 2013.	
Module No. – 3 Provision under Accounting Standard for Items Appear in Financial Statements.	**13**
Property, Plant and Equipment (Ind AS 16) - Intangible assets (Ind AS 38) -Impairment of assets (Ind AS 36) – Inventories (Ind AS 2) - Borrowing costs (Ind AS 23) – Investment Property (Ind AS – 40) –objectives, Scope, definitions, Recognition Measurement and disclosures of the above-mentioned Standards. Simple Problems on the above standards.	

Module No.- 4 Provisions under Accounting Standards for Items that do not Appear in Financial Statements.	**10**
Segment Reporting (Ind AS 108), Related Party Discloser (Ind AS 24), Events Occurring after Balance Sheet Date (Ind AS 10), Interim Financial Reporting (Ind As - 34)	

Skill Development Activities:

1. Explain the structure and functions of Indian Accounting Standards Board
2. Set out the procedure for issue of an Accounting Standard by theAccounting Standards Board.
3. List out the financial statements in accordance with Ind AS 1 and show theformats of the same with imaginary figures.
4. Explain the main provisions of Ind AS 2, Ind AS 16 and Ind AS 18
5. State and explain the provisions pertaining to Segment Reporting andRelated Party Disclosure under Ind AS.

Text Books:

1. Study material of the Institute of Chartered Accountants of India
2. Anil Kumar, Rajesh Kumar and Mariyappa, Indian Accounting Standards,HPH
3. Miriyala, Ravikanth, Indian Accounting Standards Made Easy, CommercialLaw Publishers
4. Dr.A.L.Saini IFRS for India, , Snow white publications.
5. CA Shibarama Tripathy Roadmap to IFRS and Indian AccountingStandards
6. Ghosh T P, IFRS for Finance Executives Taxman Allied Services PrivateLimited.

Note: Latest edition of text books may be used

Weblinks:

https://www.mca.gov.in/content/mca/global/en/acts-rules/ebooks/accounting-standards.html
https://en.wikipedia.org/wiki/Indian_Accounting_Standards
https://www.icai.org/post/indian-accounting-standards-indas
https://icmai.in/upload/Students/Syllabus2016/Ind_AS.pdf

Course Articulation Matrix - 23DSECOM01

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	1	-	-	1	1	-	1	-	1	1	2
CO2	2	2	2	2	2	2	1	1	1	2	2	2
CO3	2	1	1	2	2	1	1	1	1	1	1	2
CO4	2	2	2	2	2	1	1	1	2	2	2	2
Wtd. Avg.	**2**	**1.5**	**1.6**	**2**	**1.75**	**1.6**	**1**	**1**	**1.3**	**1.5**	**1.5**	**2**

V SEMESTER
DISCIPLINE SPECIFIC ELECTIVE

Course Code: 23DSECOM02	**Course Title: Financial Institutions and Markets**
Course Credits: 3 .(L:T:P): 3:0:0	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objective: To understand how to invest and deal in the different markets.

Course Outcomes:

CO1- Gain the knowledge of the structure of Indian financial system and its constituents.

CO2- Outline the role of capital and money market in economic development.

CO3- Comprehend primary and secondary market and its relevance in capital formation.

CO4- knowledge of the role played by Banking and NBFC's

Syllabus:	**Hours**
Module No. 1: Financial System in India	**09**
Introduction – Meaning – Financial concepts - Constituents of financial system – Structure of financial system – Role of financial system- Functions of financial system – Development of financial system in India till date- Financial sector reforms – Financial System and Economic development – Weakness of Indian financial system.	
Module No. 2: Capital Market & Money Market	**08**
Introduction - Capital Market: Introduction- Meaning – Importance – Functions – Players in the capital market – Instruments of capital Market – Components of capital Market – Recent trends in Capital Market.; Money Market: Introduction- Meaning- Importance – Functions – Instrument of money market – Recent trends in Money Market.	
Module No. 3: Primary Market & Secondary Market	**10**
Introduction - Primary Market/New Issue Market: Introduction – Meaning –- Methods of floating new issues: Public issue–Offer for sale – Right Issue – Private placement – Problems of Indian primary market; Secondary Market: Introduction – Meaning – History – Methods in Stock Markets - Recognition of stock exchanges – Function of stock exchanges of BSE- NSE – OTCI – Listing of securities – trading & settlement procedure in the stock market - Problems of Indian Stock Market; SEBI: History – objectives - functions –Role- Reforms in secondary Market.	

Module No. 4 Banking & Development Financial Institutions	**10**
Introduction - Banking: Introduction – Meaning – Role and functions – Types of Banks; Development Financial Institutions: Introduction – History – Management - Role & Functions of EXIM Bank –NABARD SIDBI – MUDRA – NHB – LIC & GIC - UTI – SFCs.	
Module No. 5: Non-Banking Financial Companies (NBFCs) & Forex Market	**08**
Introduction – Meaning- Role – Importance – Types of NBFCs – Insurance Companies - Loan Companies - Investment Companies — Leasing & Hire Purchase - Housing Finance — Chit Funds - Mutual funds -Venture Capital Funds - Factors & Forfeiting - Credit Rating - Depository and Custodial Services; Forex market- Concept- Meaning- Importance-Merits of forex market- Fluctuations in foreign exchange rates- Causes and Effects.	
Skill Developments Activities: 1. List out any five recent financial sectors reforms and analyse them. 2. Collect Share Application Forms of any five different companies who have offered IPO in the last/present financial year. 3. Collect data on last financial year price rigging and insider trading cases reportedas per SEBI. 4. Visit website of Development Financial Institutions (DFIs) and prepare report onthe history/milestone and functions of the DFIs 5. Identify the Different types of Venture capital firms operating in Karnataka andtheir investment. 6. Any other activities, which are relevant to the course.	
Text Books: 1. Livingston, Miles; Financial Intermediaries; Blackwell 2. Sudhindra Bhat, Financial Institutes and Markets, Excel Books 3. NitiBhasin; Banking and Financial Markets In India 1947 To 2007; New Century 4. Indian Financial Systems, Khan M.Y, Tata McGraw Hill New Delhi. 5. E Gordon, k Natarajan (2010). Financial markets and services. Himalaya publishing house, New Delhi **Note: Latest edition of text books may be used.**	

Weblinks:

https://www.fisdom.com/financial-markets-and-institutions
https://books.google.com/books/about/Financial_Institutions_and_Markets

Course Articulation Matrix - 23DSECOM02

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	-	-	-	1	1	-	1	-	1	-	2
CO2	2	2	2	2	2	2	1	1	1	1	1	2
CO3	2	2	2	2	2	1	1	1	1	1	1	2
CO4	2	-	-	-	1	1	-	1	-	1	-	2
Wtd. Avg.	**2**	**2**	**2**	**2**	**1.5**	**1.25**	**1**	**1**	**1**	**1**	**1**	**2**

V SEMESTER
DISCIPLINE SPECIFIC ELECTIVE

Course Code: 23DSECOM04	**Course Title: Human Resources Development**
Course Credits: 3 .(L:T:P): 3:0:0	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objective: To understand how to deal with the human resource and their development in an organisation.

Course Outcomes:

CO1- Gain the knowledge of HRD.
CO2- Comprehend the framework of HRD.
CO3- Skill of cognize the human resources.
CO4- Apprehend the HR performance with counseling.

Syllabus:	**Hours**
Module No. 1: Introduction to HRD	**08**
Human Resource Development – Evolution of HRD - Relationship with HRM - Human Resource Development Functions - Roles and Competencies of HRD Professionals - Challenges to Organization and HRD professionals – Employee Behaviour – External and Internal Influence – Motivation as Internal Influence – Learning and HRD – Learning Strategies and Styles	
Module No. 2: Frame work of Human Resource Development	**08**
Frame work of Human Resource Development - HRD Processes - Assessing HRD Needs - HRD Model - Designing Effective HRD Program - HRD Interventions- Creating HRD Programs - Implementing HRD programs - Training Methods - Self Paced/Computer Based/ Company Sponsored Training - On-the-Job and Off-the-Job - Brain Storming - Case Studies - Role Plays - Simulations – T-Groups - Transactional Analysis.	
Module No. 3: Evaluating HRD Programs	**09**
Introduction-Evaluating HRD programs - Models and Frame Work of Evaluation - Assessing the Impact of HRD Programs - Human Resource Development Applications - Fundamental Concepts of Socialization - Realistic Job Review - Career Management and Development.	
Module No. 4: Management Development	**10**
Introduction **-** Management Development - Employee counselling and wellness services – Counselling as an HRD Activity-Counselling Programs - Issues in Employee Counselling - Employee Wellness and Health Promotion Programs - Organizational Strategies Based on Human Resources.	

Module No. 5: HR Performance	**10**
Introduction -Work Force Reduction, Realignment and Retention - HR Performance and Bench Marking - Impact of Globalization on HRD- Diversity of Work Force - HRD programs for diverse employees - Expatriate & Repatriate support and development.	
Skill Development Activities: 1. Discuss with HR manager on HRD and report on the same. 2. Visit any Organisation in your locality, collect information and report onemployee welfare facilities provided by the company. 3. Meet HR trainer, discuss their role and responsibilities. 4. Visit any Organisation, discuss with employees about effectiveness of training.	
5. Any other activities, which are relevant to the course.	
Text Books: 1. Werner & Desimone, Human Resource Development, Cengage Learning. 2. William E. Blank, Handbook for Developing Competency Based TrainingProgrammes, Prentice -Hall, New Jerse 3. Uday Kumar Haldar, Human Resource Development, Oxford University Press. 4. Srinivas Kandula, Strategic Human Resource Development, PHI Learning. 5. Nadler, Leonard: Corporate Human Resource Development, Van NostrandReinhold, ASTD, New York. 6. Rao, T.V and Pareek, Udai: Designing and Managing Human Resource Systems,Oxford IBH Pub. Pvt. Ltd., New Delhi, 2005. 7. Rao, T.V: Readings in HRD, Oxford IBH Pub. Pvt. Ltd., New Delhi, 2004. 8. Viramani, B.R and Seth, Parmila: Evaluating Management Development, VisionBooks, New Delhi. 9. Rao, T.V. (et.al): HRD in the New Economic Environment, Tata McGraw-HillPub.Pvt, Ltd., New Delhi, 2003. 10. Rao, T.V: HRD Audit, Sage Publications, New Delhi. **Note: Latest Edition of text books may be used.**	

Weblinks: https://en.wikipedia.org/wiki/Human_resource_management
https://hbr.org/1981/09/managing-human-resources

Course Articulation Matrix - 23DSECOM04

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	-	1	-	1	2	1	2	2	2	-	2
CO2	2	-	1	1	1	2	1	2	2	2	-	2
CO3	2	1	1	1	1	2	1	2	2	2	1	2
CO4	2	1	1	-	1	2	1	2	2	2	1	2
Wtd. Avg.	**2**	**1**	**1**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**1**	**2**

V SEMESTER
DISCIPLINE SPECIFIC ELECTIVE

Course Code: 23DSECOM05	**Course Title: Basics of Business Analytics**
Course Credits: 3 .(L:T:P): 3:0:0	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objective: To have the basic knowledge of how to analyze the business and conduct the research.

Course Outcomes:

CO1- Understand the analytical applications in practice.
CO2- Validate the sources of data, use of statistical tools and techniques.
CO3- Formulate business models, using quantitative methods including spreadsheets and graphical methods.
CO4- Awareness about the emerging trends in the world of analytics.

Syllabus:	**Hours**
Module No. 1: Introduction to Business Analytics	**08**
Data, Types of Data- Forms of Data-Evolution of Big Data- Business Analytics - Need forAnalytics- Types of Analytics-Importance of Business Analytics in Decision Making-Analytics Process Model-SMART model-Spreadsheet analysis-Internet of Things.	
Module No. 2: Technology of Big Data	**07**
Overview of DBMS, Data Warehousing: Concepts, Need, Objectives– Relevance of Data Warehousing in Business Analytics-Data Mining-Application of Data Mining-Data Mining Technique- Data Classification- Hadoop Distributed File System-Features of HDFS-MapReduce-Features of MapReduce.	
Module No. 3: **Data Scientists and Data Visualization**	**10**
Data Scientists-New Era of Data Scientists -Data Scientist model- Sources of Data scientists- Horizontal Versus Vertical Data Scientists- Retention of Data Scientists-Data Visualization-Types of Data Visualization -Issues in Data Visualization-Tools in data visualization- Data Collection, Sampling and Pre-processing- Types of Data Sources- Sampling-Types of Data Elements-Visual Data Exploration and Exploratory Statistical Analysis-Missing Values-Missing Values- Standardizing Data-Categorization-Weights of Evidence Coding-Variable Selection-Segmentation.	

Module No. 4: Practices of Analytics	**10**
Predictive Analytics- Target Definition-Linear Regression -Logistic Regression - DecisionTrees -Neural Networks -Support Vector Machines-Ensemble Methods - Multiclass Classification Techniques -Evaluating Predictive Models-Descriptive Analytics- Association Rules -Sequence Rules –Segmentation-Survival Analysis-Survival Analysis Measurements-Kaplan Meier Analysis-Parametric Survival Analysis-Proportional Hazards Regression-Extensions of Survival Analysis Models-Evaluating Survival Analysis Models-Social Network Analytics-Social Network Definitions-Social Network Metrics-Social Network Learning-Relational Neighbor Classifier-Probabilistic RelationalNeighbor Classifier -Relational Logistic Regression-Collective Inferencing –Egonets- Mobile Analytics- Practices of analytics in - Google-General Electric-Microsoft-Kaggle- Facebook-Amazon.	
Module No. 5: Big Data and Emerging trends	**10**
Data for Big Data-Enterprise orientation for Big data –leadership –Targets-Analysts-Other Factors to Consider in Big Data Success-Emerging Technologies in Health Information Systems: Transforming Health in Information Era-Omics Revolution and Personalized Medicine-Genomic Data Integration into Medical Records-Socio-demographic Data for Health Records-Family Health History-Genomics Driven Wellness Tracking and Management System(GO-WELL)- Emerging trends of analytics in Education, government, finance & Supply Chain Management.	
Skill Development Activities: **Course teacher can identify and give the skill development activities.**	
Text Books: 1. Big Data Black Book, DT Editorial Services, Dreamtech Press, 2015. 2. Big Data at Work, Thomas H. Davenport, Harvard Business Review Press,Boston, Massachusetts, 2014. 3. Analytics in a Big Data World, John Wiley & Sons, Inc., Hoboken, NewJersey,2014. 4. Big Data and Internet of Things: A Roadmap for smart Environments, Nik BessisCiprian Dobre Editors, Springer International Publishing Switzerland 2014 **Note: Latest edition of text books may be used.**	

Weblinks: - https://www.oracle.com/in/business-analytics/what-is-business-analytics
https://pll.harvard.edu/course/business-analytics

Course Articulation Matrix - 23DSECOM05

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	-	1	-	1	2	1	2	2	2	-	2
CO2	2	-	1	1	1	2	1	2	2	2	-	2
CO3	2	1	1	1	1	2	1	2	2	2	1	2
CO4	2	1	1	-	1	2	1	2	2	2	1	2
Wtd. Avg.	**2**	**1**	**1**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**1**	**2**

V SEMESTER
DISCIPLINE SPECIFIC ELECTIVE

Course Code: 23DSECOM03	**Course Title: Retail Management**
Course Credits: 3 .(L:T:P): 3:0:0	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: 2 1/2 Hours	**Semester End Examination Marks: 60**

Course Objective: To gain the knowledge of the market constraints and how to resolve it.

Course Outcomes:

CO1- Knowledge of the contemporary of retail management.
CO2- Know the issues, strategies and trends in Retailing.
CO3- Perceive the role and responsibilities of store manager and examine the visual merchandising and its techniques in the present context.
CO4- Comprehend the emerging trends in Retail Industry.

Syllabus:	**Hours**
Module No. 1: Introduction and Perspectives on Retailing	**08**
Introduction – Meaning – Characteristics - Emergence of organizations of retailing - Types of Retailers (Retail Formats) - Multichannel Retailing -Customer Buying Behaviour, Historical Perspective - role of retailing - trends in retailing – FDI in Retail - Problems of Indian Retailing - Current Scenario.	
Module No. 2: Theories and Strategies of Retail Planning	**10**
Introduction - Wheel of retailing - The Retail Accordion - Strategy - Financial Strategy - Site & Locations (Size and space allocation - location strategy - factors affecting the location of Retail - Retail Location Research and Techniques, Objectives of Good Store Design.) – Human Resource Management in retailing - Information Systems and supply chain management & Logistics in retail.	
Module No. 3: Store Management and Visual Merchandising	**10**
Introduction - Store Management: Responsibilities of Store Manager - Store Security- Parking Space Problem at Retail Centers, Store Record and Accounting System - Coding System - Material Handling in Stores - Management of Modern retails -Store Layout, Design: Types of Layouts. **Visual Merchandising:** Introduction - Visual Merchandising Techniques - Controlling Costs and Reducing Inventories Loss – Exteriors & Interiors Customer Service - Planning Merchandise Assortments -Buying systems –Buying merchandise and Retail Communication Mix- Role of Visual Merchandiser.	

Module No. 4: Retail Pricing	**07**
Introduction – Meaning of Retail Pricing - Factors influencing retail pricing - Retailpricing strategies.	
Module No. 5: Emerging trends in Retail Industry	**10**
Artificial intelligence in retailing – Shopping with AR - Hyperlocal in retailing - Product customization - Visual search – Omni channel experiences - Pop-up shops - Same-day delivery - Social shopping - Private label brands - Ethical and value-based brands - Google Shopping.	

Skill Developments Activities:

1) Visit any large scale retail centre, list out the problems of a retailer.
2) Discuss with retailer on the strategies considered while planning the retail business.
3) Contact any store manager, collect the role and responsibilities discharged by himin the retail shop.
4) Visit any Virtual merchandising, find out the techniques adopted bymerchandiser.
5) Contact any retailer, collect the information on factors influencing on retail pricing.
6) Any other activities, which are relevant to the course.

Text Books:

1. Sinha, Piyush Kumar & Uniyal (2010), Managing Retailing, Oxford UniversityPress.
2. Chetan Bajaj, Retail Management, Oxford University press.
3. Levy &Weitz (2012), Retail Management, TMH, 8th Edition
4. Dravid Gilbert, Retail Marketing Management, Pearson Education, 2nd Edition.
5. A. J. Lamba, The Art of Retailing, McGraw Hill.
6. Swapna Pradhan (2012), Retailing Management, TMH,
7. Barry Berman, Joel R. Evans, Retail Management: A Strategic Approach, PearsonPublications.

Note: Latest edition of text books may be used.

Weblinks: https://www.managementstudyguide.com/retail-management.htm
https://www.shiksha.com/online-courses/articles/retail-management

Course Articulation Matrix - 23DSECOM03

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	2	2	2	2	2	1	3	3	3	1	2
CO2	2	2	2	2	2	2	1	3	3	3	1	2
CO3	2	2	2	2	2	-	1	3	3	3	1	2
CO4	2	2	2	2	2	2	1	3	3	3	1	2
Wtd. Avg.	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**3**	**3**	**3**	**1**	**2**

V SEMESTER
VOCATIONAL

Course Code: 23VOCCOM01	**Course Title: GST-Law & Practice (voc)**
Course Credits:3 .(L:T:P): 2:0:1	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course objectives: To gain the knowledge of assessment of tax payments.

Course Outcomes:
CO1- Knowledge of the concepts of GST.
CO2- Comprehend the fundamentals of GST.
CO3- Analyze the GST Procedures in the Business.
CO4- Know the GST Assessment and its computation.

Syllabus:	**Hours**
Module No. 1: Introduction to GST	**08**
Introduction-Meaning and Definition of GST, Objectives, Features, Advantages and Disadvantages of GST, Taxes subsumed under GST, Structure of GST (Dual Model) - CGST, SGST and IGST. GST Council, Composition, Powers and Functions. CGST Act,2017- Important definitions.	
Module No. 2: GST Registration and Taxable Event	**08**
Registration under GST provision and process. Amendment and cancellation of registration, Taxable event -Supply of goods and Services-Meaning, Scope and types-composite supply, Mixed supply. Determination of time and place of supply of goods and services. Levy and collection of tax. List of exempted goods and services-Problems.	
Module No. 3: Input Tax Credit	**08**
Input Tax Credit Eligible and Ineligible Input Tax Credit; Apportionments of Credit and Blocked Credits; Tax Credit in respect of Capital Goods; Recovery of Excess Tax Credit; Availability of Tax Credit in special circumstances; Transfer of Input tax, Reverse Charge Mechanism, tax invoice, Problems on input tax credit.	
Module No. 4 : GST Assessment	12
Tax Invoice, Credit and Debit Notes, Returns, Audit in GST, Assessment: Self-Assessment, Summary and Scrutiny. Special Provisions. Taxability of E-Commerce, Anti-Profiteering, Avoidance of dual control- issues in filing of returns, monthly collection targets, GST Council meetings.	

Module No. 5: Valuations of Goods and Services Under GST	**09**
Introduction to Valuation under GST, Meaning and Types of Consideration: a) Consideration received through money b) Consideration not received in money c) Consideration received fully in money, valuation rules for supply of goods and services: 1) General Valuation Rules; 2) Special Valuation Rules; Other cases for valuation of supply, imported services, imported goods, valuation for discount. Transaction Value: Meaning and conditions for transaction value, inclusive transaction value, and exclusive discount excluded from transaction value. Problems on GST.	
Skill Development Activities: 1. Prepare a tax invoice under the GST Act. 2. Write the procedure for registration under GST. 3. Prepare a chart showing rates of GST.	
4. Compute taxable value and tax liability with imaginary figures under CGST,SGST and IGST. 5. List out the exempted Goods and Services under GST. 6. Analyse the custom duties rates of last five years. 7. Any other activities, which are relevant to the course.	
Text Books: 1. V.S.Datey, Goods and Services Taxes, Taxman. 2. Sathpal Puliana, M. A. Maniyar, Glimpse of Goods and Service Tax, KarnatakaLaw Journal Publications, Bangalore. 3. Pullani and Maniyar, Goods and Service Tax, Published by Law Journal,Bangalore. 4. H.C. Mehrotra and V.P. Agarwal, Goods and Services Tax. 5. H.C. Mehotra and S.P. Goyal, Goods and Services Tax. 6. Ghousia Khatoon, C.M. Naveen Kumar and S.N. Venkatesh, Goods and ServicesTax, Himalaya Publishing House, Bangalore. **Note: Latest edition of text books may be used.**	

Weblinks: https://www.gst.gov.in
https://gstcouncil.gov.in
https://en.wikipedia.org/wiki/Goods_and_Services_Tax_(India)

Course Articulation Matrix - 23VOCCOM01

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	1	-	-	-	1	1	1	-	1	-	2
CO2	2	1	-	-	-	1	1	1	-	1	-	2
CO3	2	2	2	2	2	1	1	1	1	1	1	2
CO4	2	2	2	2	2	1	1	1	1	1	1	2
Wtd. Avg.	**2**	**1.5**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**2**

VI SEMESTER
DISCIPLINE SPECIFIC COURSE

Course Code: 233616	**Course Title: Advanced Financial Management**
Course Credits: 4 .(L:T:P): 4:0:0	**Teaching Hours/Week: 04 Hours**
Total Contact Hours: 60 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objective: To acquaint the students with the knowledge of advanced financial planning and results.

Course Outcomes:

CO1- Knowledge of the overall cost of capital.
CO2- Comprehend the different advanced capital budgeting techniques.
CO3- Know the importance of dividend decisions, mergers and acquisition.
CO4- Enable the ethical and governance issues in financial management

Syllabus:	**Hours**
Module No. 1: Cost of Capital and Capital Structure Theories	**12**

Cost of Capital: Meaning and Definition – Significance of Cost of Capital – Types of Capital – Computation of Cost of Capital – Specific Cost – Cost of Debt – Cost of Preference Share Capital – Cost of Equity Share Capital – Weighted Average Cost of Capital – Problems.

Theories of capital structures: The Net Income Approach, The Net Operating Income Approach, Traditional Approach and MM Hypothesis – Problems.

Module No. 2: Risk Analysis in Capital Budgeting	**12**

Risk Analysis – Types of Risks – Risk and Uncertainty – Techniques of Measuring Risks – Risk adjusted Discount Rate Approach – Certainty Equivalent Approach – Sensitivity Analysis - Probability Approach - Standard Deviation and Co-efficient of Variation – Decision Tree Analysis – Problems. .

Module No. 3: Dividend Theories	**12**

Introduction - Dividend Decisions: Meaning - Types of Dividends – Types of Dividends Polices – Significance of Stable Dividend Policy - Determinants of Dividend Policy; Dividend Theories: Theories of Relevance – Walter's Model and Gordon's Model and Theory of Irrelevance – The Miller-Modigliani (MM) Hypothesis - Problems.

Module No. 4: Mergers and Acquisitions	**14**

Meaning - Reasons – Types of Combinations - Types of Merger – Motives and Benefits of Merger – Financial Evaluation of a Merger - Merger Negotiations – Leverage buyout, Management Buyout Meaning and Significance of P/E Ratio. Problems on Exchange Ratios based on Assets Approach, Earnings Approach and Market Value Approach and Impact of Merger on EPS ,Market Price and Market capitalization.

Module No. 5: Ethical and Governance Issues	**10**
Introduction to Ethical and Governance Issues: Fundamental Principles, Ethical Issues in Financial Management, Agency Relationship, Transaction Cost Theory, Governance Structures and Policies, Social and Environmental Issues, Purpose and Content of an Integrated Report.	

Skill Development Activities:

1. Visit an organisation in your town and collect data about the financial objectives.
2. Compute the specific cost and Weighted average cost of capital of an Organisation, you have visited.
3. Case analysis of some live merger reported in business magazines.
4. Meet the financial manager of any company, discuss ethical issues in financialmanagement.
5. Collect the data relating to dividend policies practices by any two companies.
6. Any other activities, which are relevant to the course.

Text Books:

1. I M Pandey, Financial management, Vikas publications, New Delhi.
2. Abrish Guptha, Financial management, Pearson.
3. Khan & Jain, Basic Financial Management, TMH, New Delhi.
4. S N Maheshwari, Principles of Financial Management, Sulthan Chand & Sons, NewDelhi.
5. Chandra & Chandra D Bose, Fundamentals of Financial Management, PHI, New Delhi.
6. B.Mariyappa, Advanced Financial Management, Himalaya Publishing House, NewDelhi.
7. Ravi M Kishore, Financial Management, Taxman Publications
8. Prasanna Chandra, Financial Management, Theory and Practice, Tata McGraw Hill.

Note: Latest edition of text books may be used

Weblinks: https://en.wikipedia.org/wiki/Financial_management
- https://www.managementstudyguide.com/financial-management.htm
https://www.oracle.com/in/erp/financials/financial-management

Course Articulation Matrix - 233616

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	1	-	-	-	1	-	1	1	1	1	1
CO2	2	2	1	1	2	1	-	1	2	2	2	3
CO3	2	2	2	2	2	1	1	1	2	1	2	3
CO4	2	2	2	2	2	1	1	1	2	1	2	3
Wtd. Avg.	**2**	**1.75**	**1.6**	**1.6**	**2**	**2**	**1**	**1**	**1.75**	**1.25**	**1.75**	**2.5**

VI SEMESTER
DISCIPLINE SPECIFIC COURSE

Course Code: 233617	**Course Title: Income Tax Law & Practice - II**
Course Credits: 4 .(L:T:P): 4:0:0	**Teaching Hours/Week: 04 Hours**
Total Contact Hours: 60 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objective: To gain the knowledge of tax payments in the new regime.

Course Outcomes:

CO1- Knowledge of computation in income from business and otherProfession.
CO2- Procedure of tax deduction and advance tax ruling.
CO3- Compute the income from other sources.
CO4- To acquire the knowledge of assessment procedure and to know the power of incometax authorities.

Syllabus:	**Hours**
Module No. 1: Profits and Gains of Business and Profession	**14**
Introduction-Meaning and definition of Business, Profession and Vocation. - Expenses Expressly allowed - Expenses Expressly Disallowed - Allowable losses - Expressly disallowed expenses and lossess, Expenses allowed on payment basis. Problems on computation of income from business of a sole trading concern - Problems on computation of income from profession: Medical Practitioner - Advocate and Chartered Accountants.	
Module No. 2: Tax Deduction at Sources & Advance Tax Ruling	**12**
Introduction - Meaning of TDS - Provisions regarding TDS - TDS to be made from Salaries - Filing of Quarterly statement – Theory and Problems; Advance Tax: Meaning of advance tax - Computation of advance tax - Instalment of advance tax and due dates. **Deductions** under Section 80C, 80CCC, 80CCD, 80CCG, 80D, 80DD, 80DDB, 80E, 80G, 80GG, 80TTA and 80U as per old regime. (Individuals only).	
Module No. 3: Income from other Sources	**12**
Introduction - Incomes taxable under Head income other sources – Securities -Types of Securities - Rules for Grossing up. Ex-interest and cum-interest securities. Bond Washing Transactions - Computation of Income from other Sources.	
Module No. 4: Set Off and Carry Forward of Losses & Assessment of individuals.	**10**
Introduction – Provisions of Set off and Carry Forward of Losses (Theory only) - Computation of Total Income and tax liability of an Individual.	

Module No. 5: Assessment Procedure and Income Tax Authorities:	**12**
Introduction - Due date of filing returns, Filing of returns by different assesses, E-filing of returns, Types of Assessment, Permanent Account Number -Meaning, Procedure for obtaining PAN and transactions were quoting of PAN is compulsory. Income Tax Authorities their Powers and duties.	

Skill Development activities:

1. Visit any chartered accountant office and identify the procedure involved inthe computation of income from profession.
2. List out the different types of capital assets and identify the procedure involved in the computation of tax for the same.
3. List out the steps involved in the computation of income tax from othersources and critically examine the same.
4. Identify the Due date for filing the returns and rate of taxes applicable forindividuals.
5. Draw an organization chart of Income Tax department in your locality.
6. Any other activities, which are relevant to the course.

Text Books:

1. Mehrotra H.C and Goyal, Direct taxes, Sahithya Bhavan Publication, Agra.
2. Vinod Singhania, Direct Taxes, Taxman Publication Private Ltd, NewDelhi.
3. Gaur and Narang, Law and practice of Income Tax, KalyaniPublications, Ludhiana.

Note: Latest edition of text books may be used.

Weblinks: https://www.sultanchandandsons.com/book/575/income-tax-%E2%80%93-law-and-practice
https://www.gacrkl.ac.in/studymaterial/gacr-ug-com-c6.pdf
https://www.icsi.edu/docs/webmodules/Publications/4.%20Tax%20Laws%20and%20Practice.

Course Articulation Matrix - 233617

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	1	1	-	-	1	-	1	-	-	-	1
CO2	2	1	-	-	-	1	1	1	-	1	-	1
CO3	2	2	2	1	2	1	1	1	1	1	2	2
CO4	2	2	2	1	2	1	2	1	1	2	2	2
Wtd. Avg.	**2**	**1.5**	**1.6**	**1**	**2**	**1**	**1.3**	**1**	**1**	**1.3**	**2**	**1.5**

VI SEMESTER
DISCIPLINE SPECIFIC COURSE

Course Code: 233618	**Course Title: Management Accounting**
Course Credits: 4 .(L:T:P): 4:0:0	**Teaching Hours/Week: 04 Hours**
Total Contact Hours: 60 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objective: To understand the procedures of maintaining accounts in an organization.

Course Outcomes:

CO1- Knowledge of the significance of management accounting.

CO2- Analyze and interpret the corporate financial statements by using various techniques.

CO3- Compare the financial performance of corporates through ratio analysis and cash flow.

CO4- Acquaint the knowledge of marginal costing.

Syllabus:	**Hours**
Module No. 1: Management Accounting	**12**
Introduction – Concept – Meaning and Definition - Significance - Scope - Objectives and Functions - Difference between Financial Accounting, Cost Accounting and Management Accounting - Advantages and Limitations of Management Accounting -Management Accountant: Role and Functions of Management Accountant.	
Module No. 2: Financial Statements Analysis and Interpretation	**12**
Introduction – Meaning and Nature of financial statements - Limitations of financial statements - Essentials of a good financial statement. Analysis and interpretations- Meaning and definition of Financial of analysis, types of analysis, Techniques of Financial Analysis- Comparative Statements, Common Size Statements and Trend Analysis -Problems.	
Module No. 3: Ratio Analysis	**14**
Introduction - Meaning and Definition of Ratio Analysis, Uses & Limitations of Ratio Analysis –Classification of ratios: Liquidity ratios: Current ratio, Liquid ratio and Absolute liquid ratio; Solvency ratios: Debt equity ratio, Proprietary ratio and Capital gearing ratio - Earning per share and return on capital employed; Profitability ratios: Gross profit ratio - Net profit ratio – Operating ratio, and Operating profit ratio. Turnover ratios: Inventory turnover ratio - Debtors turnover ratio Debt collection period - Creditors turnover ratio -Debt payment period, Assets turnover ratio, Earnings per share and Price Earnings Ratio. Problems on Ratio Analysis - Preparation of financialstatements with the help of Accounting Ratios.	

Module No. 4: Cash flow statement	**12**
Introduction- Meaning and Definition, Merits and Demerits, differences between Fund flow and cash flow statements. Provisions of Ind AS 7.Procedure of cash flow statement Concept of cash and cash equivalent. Classification of Cash flows, Preparation of cash flow statement as per Ind AS 7 (indirect method only). Problems.	
Module No. 5: Marginal Costing	**10**
Definition, basic concepts, assumptions, marginal cost statements, contributions break even analysis contributions, PV ratios, margin of safety and decision areas.	
Skill Development Activities: 1. Meet Management accountant and discuss his role in decision making in an Enterprise. 2. Collect financial statements of any one corporate entity for two year and preparea comparative statement and analyse the financial position. 3. Collect financial statements of any one corporate entity, analyse the same byusing ratio analysis. 4. Prepare a cash flow statement 5. Meet the management accountant, discuss the steps involved in managementaudit. 6. Collect reports of any two corporates, analyse the management review and governance of the same. 7. Any other activities, which are relevant to the course.	
Text Books: 1. Study Materials of ICAI on Management Accounting (Updated) 2. Study Materials of ICMAI on Management Accounting 3. Charles T. Horngren, Gary L. Sundem, Dave Burgstahler, Jeff O. Schatzberg, Introduction to Management Accounting, Pearson Education. 4. Khan, M.Y. and Jain, P.K. Management Accounting. McGraw Hill Education. 5. Arora, M.N. Management Accounting, Vikas Publishing House, New Delhi 6. Maheshwari, S.N. and S.N. Mittal, Management Accounting. Shree Mahavir BookDepot, New Delhi. **Note: Latest edition of text books may be used.**	

Weblinks: https://en.wikipedia.org/wiki/Management_accounting
https://www.investopedia.com/terms/m/managerialaccounting
https://www.businessnewsdaily.com/16202-management-accounting

Course Articulation Matrix - 233618

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	-	-	1	-	1	-	1	1	1	-	2
CO2	2	2	2	2	2	1	1	1	1	1	1	2
CO3	2	2	1	1	2	1	1	1	1	1	1	2
CO4	2	-	-	1	-	1	-	1	1	1	-	2
Wtd. Avg.	**2**	**2**	**1.5**	**1.25**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**2**

VI SEMESTER
DISCIPLINE SPECIFIC ELECTIVE

Course Code: 23DSECOM06	**Course Title: Indian Accounting Standards-2**
Course Credits: 3 .(L:T:P): 3:0:0	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: 2 1/2 Hours	**Semester End Examination Marks: 60**

Course Objective: To understand the different upgraded accounting standards.

Course Outcomes

CO1- Knowledge of preparing the consolidated financial statements as per INDAS.
CO2- Learn the disclosures in the financial statements.
CO3- Know how about accounting policies.
CO4- Analyze the Revenue based accounting standard.

Syllabus	**Hours**
Module-1 Consolidated Financial Statement (Ind AS 110)	**9**
Meaning and Definition- Holding Company and Subsidiary Company, Steps in Preparation of consolidated Financial Statements, Capital profit, Revenue profit, Non-controlling Interest and Goodwill or Capital Reserve and Unreleased profit, and mutual indebtedness. Problems on Preparation of Consolidated Balance Sheet.	
Module No. 2 Disclosures in the Financial Statements	**9**
Employee benefits (Ind As 19) Earnings per Share (Ind AS 33) Lease (Ind AS 116), Interim Financial Reporting (Ind AS 34) Share-based Payment(Ind AS 102).	
Module No. 3 Measurement Based on Accounting Policies	**9**
Accounting Policies, Changes in Accounting Estimates and Errors (Ind AS 8),first time adoption of Ind As (Ind As 101) Fair Value Measurement- (Ind AS 113) Accounting for Government Grants and Disclosure of Government Assistance((Ind AS 20)) and Share Based Payment (Ind AS 102)	
Module No. 4 Accounting and Reporting of Financial Instruments	**10**
Presentation of Financial Instruments (Ind AS 32) – Meaning, Financial Assets, Financial Liabilities - Presentation Recognition and Measurement of financial Instruments (Ind AS 39) – Initial and Subsequent Recognition and measurement of Financial Assets and Financial Liabilities, Derecognition of Financial Assets and Financial Liabilities- Disclosures of Financial Instruments (Ind AS 107)	
Module No. 5 Revenue based accounting standard	**8**
Revenue from Contracts with Customers (Ind AS 115), Fair Value Measurement(Ind AS 113) Contract, Practical Provision s and problems on the above standards.	

Skill Development Activities:

1. Prepare consolidated Balance sheet with imaginary figures.
2. Make a list of Indian Accounting Standards
3. Make disclosures of any five Indian Accounting Standards.
4. Study the compliance with the requirements of Indian Accounting standards as disclosed in the Notes to Accounts in Annual Reports.

Text Books:

1. Study material of the Institute of Chartered Accountants of India
2. Anil Kumar, Rajesh Kumar and Mariyappa, Indian Accounting Standards, HPH
3. Miriyala, Ravikanth, Indian Accounting Standards Made Easy, Commercial Law Publishers
4. Dr.A.L.Saini IFRS for India, , Snow white publications.
5. CA Shibarama Tripathy Roadmap to IFRS and Indian Accounting Standards
6. Ghosh T P, IFRS for Finance Executives Taxman Allied Services PrivateLimited.

Note: Latest edition of text books may be used

Weblinks: https://www.icai.org/post/indian-accounting-standards-indas
https://icmai.in/upload/Students/Syllabus2016/Ind_AS.pdf
https://www.mca.gov.in/content/mca/global/en/acts-rules/ebooks/accounting-standards.html

Course Articulation Matrix 23DSECOM06

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	1	-	-	1	1	-	1	-	1	1	2
CO2	2	2	2	2	2	2	1	1	1	2	2	2
CO3	2	1	1	2	2	1	1	1	1	1	1	2
CO4	2	2	2	2	2	1	1	1	2	2	2	2
Wtd. Avg.	**2**	**1.5**	**1.6**	**2**	**1.75**	**1.6**	**1**	**1**	**1.3**	**1.5**	**1.5**	**2**

VI SEMESTER
DISCIPLINE SPECIFIC ELECTIVE

Course Code: 23DSECOM07	**Course Title: Investment Management**
Course Credits: 3 .(L:T:P): 3:0:0	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: 2 1/2 Hours	**Semester End Examination Marks: 60**

Course Objective: To understand about the investments in various fields.

Course Outcomes:

CO1- Knowledge of investments and its instruments.
CO2- Comprehend the functioning of secondary market in India.
CO3- Gain the concept of risk and return and their relevance in purchasing and selling ofsecurities.
CO4- Analyze the company's technical analysis for trading in the share market.

Syllabus:	**Hours**
Module No. 1: Concept of Investment	**07**
Introduction - Investment: Attributes, Economic vs. Financial Investment, Investment andspeculation, Features of a good investment, Investment Process. Financial Instruments: Money Market Instruments, Capital Market Instruments, Derivatives.	
Module No. 2: Fundamental Analysis	**10**
Fundamental analysis-EIC Frame Work, Global Economy, Domestic Economy, Business Cycles,Industry Analysis and Company Analysis. Valuation of securities: Valuation of Bonds and debentures and preference shares, equity shares-no growth rate, normal growth rate and super normal growth rate.	
Module No. 3: Risk & Return	**10**
Risk and Return Concepts: Concept of Risk, Types of Risk- Systematic risk, Unsystematic risk,Calculation of Risk and returns. Portfolio Risk and Return: Expected returns of a portfolio, Calculation of Portfolio Risk and Return.	
Module No. 4 Technical Analysis	**08**
Technical Analysis – Concept, Theories- Dow Theory, Eliot wave theory. Charts-Types, Trend and Trend Reversal Patterns. Mathematical Indicators – Moving averages, ROC, RSI, and Market Indicators - Market Efficiency and Behavioural Finance: Random walk and Efficient Market Hypothesis, Forms of Market Efficiency, Empirical test for different forms of market efficiency	

Module No. 5: Portfolio Management	**10**
Portfolio Management: Meaning, Need, Objectives, process of Portfolio management, Selection of securities and Portfolio analysis. Construction of optimal portfolio using Sharpe's Single Index Model. Portfolio Performance evaluation (Theory only)	
Skill Developments Activities: 1. Collect and compare the data on financial instruments selected for investment from anyfive investors. 2. Open Demat account, learn how to trade in stock market and submit the report onprospectus and challenges of stock trading. 3. Discuss with investors on systematic and unsystematic risk analysis, submit report on thesame. 4. Calculate the intrinsic value of any five bonds listed on BSE / NSE, making necessary assumptions.	
5. Summarise the parameters of 'Economy Analysis' of any five countries and give yourinference. 6. Any other activities, which are relevant to the course.	
Text Books: 1. Bodie ZVI, Kane Alex, Marcus J Alan and Mohanty Pitabas., Investments, Tata McGrawHill Publishing Company Limited, New Delhi. 2. Sharpe F. William, Alexander J Gordon and Bailey V Jeffery, Investments, Prentice Hallof India Private Limited, New Delhi. 3. Fischer E Donald and Jordan J Ronald., Security Analysis and Portfolio Management,Prentice Hall of India Private Limited, New Delhi. 4. Kevin S., Portfolio Management, PHI, New Delhi. 5. Punithavathy Pandian, Security Analysis and Portfolio Management, Vikas PublishingHouse Private Limited, New Delhi. 6. Prasanna Chandra, Investment Analysis and Portfolio Management, Tata McGraw HillPublishing Company Limited, New Delhi.	

Weblinks: https://en.wikipedia.org/wiki/Investment_management
https://www.financestrategists.com/wealth-management/investment-management

Course Articulation Matrix - 23DSECOM07

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	-	-	-	-	1	1	1	1	1	-	2
CO2	2	2	2	1	2	1	1	1	1	1	-	2
CO3	2	2	2	2	2	2	1	1	1	2	1	2
CO4	2	2	2	2	2	2	1	1	1	2	1	2
Wtd. Avg.	**2**	**2**	**2**	**1.6**	**2**	**1.5**	**1**	**1**	**1**	**1.5**	**1**	**2**

VI SEMESTER
DISCIPLINE SPECIFIC ELECTIVE

Course Code: 23DSECOM09	**Course Title: Cultural Diversity at Work Place**
Course Credits: 3 .(L:T:P): 3:0:0	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: 2 1/2 Hours	**Semester End Examination Marks: 60**

Course Objectives: To understand the values and belief of the workforce society

Course Outcomes:

CO1- Knowledge of the notion of diversity.
CO2- Recall the cultural diversity at work place in an organization.
CO3- Explore the differences in Culture.
CO4- Assess the contemporary organizational strategies for managing workforce diversity.

Syllabus:	**Hours**
Module No. 1: Introduction to Diversity	**10**
Introduction to cultural diversity in organizations, Evolution of Diversity Management, Over View of Diversity, Advantages of Diversity, Identifying characteristics of diversity, Scope-Challenges and issues in diversity management, Understanding the nature of Diversity – Cultural Diversity – Global Organizations- Global Diversity.	
Module No. 2: Exploring Differences	**08**
Introduction -Exploring our and others' differences, including sources of our identity. Difference and power: Concepts of prejudice, discrimination, dehumanization and oppression.	
Module No. 3: Visions of Diversity and Cross Cultural Management	**10**
Models and visions of diversity in society and organizations: Justice, fairness, and groupand individual differences. Cross-Cultural Management: Meaning and Concepts, Frameworks in Cross-Cultural Management: Kluckhohn and Strodtbeck framework, Hofstede's Cultural Dimensions, Trompenaar's Dimensions, Schwartz Value Survey, GLOBE study.	
Module No. 4: Skills and Competencies	**08**
Skills and competencies for multicultural teams and workplaces/ Organizational assessment and change for diversity and inclusion, Diversity Strategies. Creating Multicultural Organisations.	

Module 5: Recent Trends in Diversity Management	**09**
Emerging workforce trends–Dual-career couples–Cultural issues in international working on work-life balance–Managing multi-cultural teams: Issues and challenges, Global demographic trends: Impact on diversity management, Social psychological perspective on workforce diversity, Diversity Management in IT organizations Contemporary Issues in Workplace Diversity.	
Skill Development Activities: 1. Visit any MNCs, identify and report on the cultural diversity in an organization. 2. Interact and List out the ways in which dehumanization done in public/ private sector organization.	
3. Interact with HR Manager of any MNCs, explore and report on cross culturalmanagement. 4. Explore the benefits of multi-cultural organizations. 5. Examine and report on diversity management in select IT organizations. 6. Any other activities, which are relevant to the course.	
Text Books: 1. Bell, M.P. (2012). Diversity in organizations (2nd Ed.). Mason, OH: Cengage. 2. Harvey, C.P. & Allard, M.J. (2015). Understanding and managing diversity:Readings, cases, and exercises (6th Ed.). Upper Saddle River, NJ: Pearson. **Note: Latest edition of text books may be used.**	

Weblinks: https://en.wikipedia.org/wiki/Cultural_diversity
https://en.unesco.org/themes/education-sustainable-development/cultural-diversity
https://www.hult.edu/blog/benefits-challenges-cultural-diversity-workplace

Course Articulation Matrix 23DSECOM09

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	-	-	-	-	1	1	1	1	1	2	2
CO2	2	-	-	-	-	1	1	1	1	1	2	2
CO3	2	1	1	1	1	1	1	1	1	1	2	2
CO4	2	2	2	2	2	1	1	1	1	1	2	2
Wtd. Avg.	**2**	**1.5**	**1.5**	**1.5**	**1..5**	**1**	**1**	**1**	**1**	**1**	**2**	**2**

VI SEMESTER
DISCIPLINE SPECIFIC ELECTIVE

Course Code: 23DSECOM10	**Course Title: Human Resource Analytics**
Course Credits: 3 .(L:T:P): 3:0:0	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objective: To understand how to deal with the human resource and their development in an organisation.

Course Outcomes:

CO1 - Knowledge of Analytics in Human Resource.

CO2 - Identify a list of HR metrics relevant to an organization's mission or goals.

CO3 - Applying the usage of HR analytics to support making data-driven decisions.

CO4 - Application of analytical techniques to interpret HR data.

Syllabus:	**Hours**
Module No. 1: HR Decision-making and HR Analytics	**08**
Introduction – HR decision making – importance and significance of HR analytics – benefits of HR analytics – Steps to implement HR analytics – HR analytics and changing role of HR managers – aligning human resources to business through HR analytics – HR analytics framework and models – LAMP Framework.	
Module No. 2: HR Business Process and HR Analytics	**09**
Statistics and statistical modelling for HR research and HR decision-making – HR research tools and techniques – data analysis for human resources – parametric and non- parametric tests- HRIS for HR decision-making – HR metrics – recruitment metrics – metrics for training and development function – HR scorecard – HR dashboard	
Module No. 3: Forecasting and Measuring HR value propositions with HR analytics	**08**
Value proposition and HR decisions – Sustainability in HR decisions – HR optimization through analytics – Predictive HR analytics	
Module No. 4: HR analytics and Data	**12**
HR data and data quality – data collection – big data for human resources – transforming HR data into HR information – HR reporting – HR report visualization – performing root cause analysis – datafication of human resources, Excel exercises: Preparing to Build Your Balanced Scorecard, Developing Executive and Operational Dashboards, Pivotal Talent Pools with High Rates of Voluntary Turnover: Voluntary Turnover, Involuntary Turnover, For-Cause Dismissals, and Layoffs	

Module 5: HR Analytics and Predictive Modelling	**08**
Different phases of HR analytics and predictive modelling – data and information for HR predictive analysis – software solutions – predictive analytics tools and techniques –understanding future human resources.	
Skill Development Activities: **Course teacher can identify and give the skill development activities.**	
Text Books: 1. Dipak Kumar Bhattacharya, HR Analytics: Understanding Theories andApplications, SAGE publications, 2017 2. Ron Person, Balanced Scorecards & Operational Dashboards with Microsoft Excel, Wiley Publications.	
3. Jac Fitz-enz, The New HR Analytics- Predicting the Economic Value of Your Company's Human Capital Investments, AMACOM. 4. Jac Fitz-enz ,John R. Mattox II, Predictive Analytics for Human Resources, Wiley& SAS Business Series. **Note: Latest edition of text books may be used.**	

Weblinks: https://www.aihr.com/blog/what-is-hr-analytics
https://www.valamis.com/hub/hr-analytics

Course Articulation Matrix - 23DSECOM10

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	-	1	-	1	2	1	2	2	2	-	2
CO2	2	-	1	1	1	2	1	2	2	2	-	2
CO3	2	1	1	1	1	2	1	2	2	2	1	2
CO4	2	1	1	-	1	2	1	2	2	2	1	2
Wtd. Avg.	**2**	**1**	**1**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**1**	**2**

VI SEMESTER
DISCIPLINE SPECIFIC ELECTIVE

Course Code: 23DSECOM08	**Course Title: Customer Relationship Management**
Course Credits: 3 .(L:T:P): 3:0:0	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objective: To learn about the relationship between a customer and a seller.

Course Outcomes:

CO1- Awareness of the nuances of customer relationship.
CO2- Analysis of the CRM link with the other aspects of marketing.
CO3- Knowledge of the Role of CRM in increasing the sales of thecompany.
CO4- Imparting the knowledge of marketing strategies and implementations.

Syllabus:	**Hours**
Module No. 1: Evolution of Customer Relationship	**08**
Introduction - CRM- Definition, Emergence of CRM Practice, Factors responsible for CRM growth, CRM process, framework of CRM, Benefits of CRM, Types of CRM, Scope of CRM, Customer Profitability, Features Trends in CRM , CRM and Cost-Benefit Analysis, CRM and Relationship Marketing.	
Module No. 2: CRM Concepts	**10**
Introduction - Customer Value, Customer Expectation, Customer Satisfaction, Customer Centricity, Customer Acquisition, Customer Retention, Customer Loyalty, Customer Lifetime Value. Customer Experience Management, Customer Profitability, Enterprise Marketing Management, Customer Satisfaction Measurements, Web based Customer Support.	
Module No. 3: **Planning for CRM**	**08**
Introduction -Steps in Planning-Building Customer Centricity, Setting CRM Objectives, Defining Data Requirements, Planning Desired Outputs, Relevant issues while planning the Outputs, Elements of CRM plan, CRM Strategy: The Strategy Development Process, Customer Strategy Grid.	
Module No. 4: CRM and Marketing Strategy	**09**
Introduction **-** CRM Marketing Initiatives, Sales Force Automation, Campaign Management, Call Centres. Practice of CRM: CRM in Consumer Markets, CRM in Services Sector, CRM in Mass Markets, CRM in Manufacturing Sector.	

Module 5: CRM Planning and Implementation	**10**
Introduction - Issues and Problems in implementing CRM, Information Technology tools in CRM, Challenges of CRM Implementation. CRM Implementation Roadmap, Road Map (RM) Performance: Measuring CRM performance, CRM Metrics.	
1. Skill Development Activities: **2.** Visit any bank, identify and note customer relationship management by banker. **3.** Conduct online survey on customer satisfaction of insurance products of anycompany. **4.** Visit any telecommunication retail service outlet, discuss CRM related aspectswith CRM manager. **5.** Discuss from any five call centre employees on how their work helps to maintain	
customer relationship. 6. Prepare report how technology impacts on CRM. 7. Any other activities, which are relevant to the course.	
Text Books: **1.** Francis Buttle, Stan Maklan, Customer Relationship Management: Concepts andTechnologies, 3rd edition, Routledge Publishers, 2015 **2.** Kumar, V., Reinartz, Werner Customer Relationship Management Concept,Strategy and Tools, 1st edition, Springer Texts, 2014. **3.** Jagdish N.Sheth, Atul Parvatiyar & G.Shainesh, "Customer RelationshipManagement", Emerging Concepts, Tools and Application", 2010, TMH **4.** Dilip Soman & Sara N-Marandi," Managing Customer Value" 1st edition, 2014, Cambridge. **5.** Alok Kumar Rai, "Customer Relationship Management: Concepts and Cases", 2008, PHI. **6.** Ken Burnett, the Handbook of Key "Customer Relationship Management", 2010, PearsonEducation. **7.** Mukesh Chaturvedi, Abinav Chaturvedi, "Customer Relationship Management-An Indian Perspective", 2010 Excel Books, 2nd edition **Note: Latest edition of text books may be used.**	

Weblinks: https://en.wikipedia.org/wiki/Customer_relationship_management
https://www.businessnewsdaily.com/15957-small-business-customer-relationship-management

Course Articulation Matrix - 23DSECOM08

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 1 2
CO1	2	2	2	2	2	2	2	3	3	3	1	2
CO2	2	1	1	1	1	1	2	1	2	2	1	2
CO3	2	2	2	2	2	2	1	2	1	1	1	2
CO4	2	1	1	1	1	1	2	1	2	2	1	2
Wtd. Avg.	**2**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.75**	**1.75**	**2**	**2**	**1**	**1**

VI SEMESTER
VOCATIONAL

Course Code: 23VOCCOM02	**Course Title: Assessment of Non - Individuals and Filing of ITRs**
Course Credits:3 .(L:T:P): 2:0:1	**Teaching Hours/Week: 03 Hours**
Total Contact Hours: 45 Hours	**Formative Assessment Marks: 40**
Exam Duration: **2 1/2 Hours**	**Semester End Examination Marks: 60**

Course Objectives: To understand the need of filing the tax.

Course Outcomes:

CO1- Knowledge to calculate the Depreciation and allowance.
CO2- Comprehend the assessment of corporate entities and determine the tax liability.
CO3- Assessing the companies with their financial aspect.
CO4- Acquaint with the rules and regulations of INDAS.

Syllabus:	**Hours**
Module No. 1: Depreciation and Investment Allowance	**07**
Introduction-Meaning of Depreciation, Important points regarding depreciation, Conditions for allowance of Depreciation, Assets eligible for depreciation, important terms for computation of depreciation allowance. Problems.	
Module No. 2: Assessment of Partnership firms	**08**
Definition of Partnership, Firm and Partners – Assessment of Firms (Section 184) – Computation of Firm's Business Income – Treatment of Interest, Commission, Remuneration received by partners (Sec 40b). Presumptive taxation (44AD) Problems on Computation of total income and tax liability of firms (Use of available software package for computation of tax liability, Related Forms and Challans)	
Module No. 3: Assessment of Companies.	**10**
Introduction-Meaning and Definition of Company-Types of Companies under Income tax Act -–Problems on computation of total income of companies- Including Minimum Alternate Tax (115JB) Applicable Deductions u/s 80IA , 80IB, 80IC, 80G - Problems on Computation of Tax Liability (Use of Software Package-Quick Books/ Electro com)	
Module No. 4: Tax Under E-Environment	**10**
Filing of Income tax returns (ITR) – Types income tax return forms- benefit of filing ITR- different sections of ITR returns- document required to filing ITR –form 26AS significance returns-Advance Tax Sections-Tax Deducted at Source (TDS)- online payment of tax- problems on Advance Tax and TDS.] E-filing of return on Income Tax Portal , Verification of ITR.	

Module No. 5: Case laws and amendments	**10**
Introduction - Recent Amendments in Filing of Returns as per Finance Bill; Recent Case Laws for guidance. Depute the students at least two weeks to any Audit Firm to learn practically the filing of Returns of various kinds of assesses. Like individuals, Firms and Companies.	
1) **Skill Development Activities:** 2) Prepare a chart showing rates of depreciation for different assets. 3) Calculate the Eligible Remuneration to working partners as per Income tax rules with imaginary figures. 4) Narrate the procedure for calculation of Book Profit. 5) Students should able to e-file and understand ITR forms. 6) Any other activities, which are relevant to the course	
Text Books: 1. Vinod K Singhania – "Direct Taxes - Law and Practice", Taxmann Publications 2. H C Mehrotra and Goyal, "Direct Taxes", Sahitya Bhavan Publications 3. Gaur and Narang ; Direct Taxes, Kalyani Publishers 4. Rajiva S. Mishra –Direct & Indirect Tax 5. Santhil & Santhil : Business taxation. 5. B.Mariyappa Business Tax Himalaya Publication House. New Delhi. **Note: Latest edition of text books may be used.**	

Weblinks: https://www.incometax.gov.in/iec/foportal
https://incometaxindia.gov.in/Pages/tax-services/file-income-tax-return
https://incometaxindiaefiling.gov.in

Course Articulation Matrix - 23VOCCOM02

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	1	1	1	1	1	2	1	2	1	1	2
CO2	2	1	1	1	1	1	2	1	2	1	1	2
CO3	2	2	2	2	2	2	1	1	1	1	1	2
CO4	2	-	-	-	-	1	2	1	2	1	1	2
Wtd. Avg.	**2**	**1.3**	**1.3**	**1.3**	**1.3**	**1.25**	**1.75**	**1**	**1.75**	**1**	**1**	**2**

Course Structure - Internship - VI Sem

Course Code: 23INTCOM01	**Course Title:** INTERNSHIP
Course Credits : 03	**Teaching Hours/Week:** 4 TO 5 WEEKS
Total Contact Hours: 45	**Formative Assessment Marks:** 20
Exam Duration: (Practical)	**Project Report: 30**

Course Objectives/ Outcomes

1. The students need to assist and contribute to the team.
2. The students will Learn and gain experience.
3. The students will have Job shadow.
4. The students will take on an increasing amount of responsibility.
5. The students will make a career call.
6. The students need to be professional.
7. The students need to Stay organized.
8. The students should manage their time wisely.
9. The students have to keep track of their projects.
10. Submission of their project.

Evaluation Pattern of V & VI Sem

C1- Centrally organized internal test	- 20marks
C2- Skill Development activities	- 20marks
C3- Written examination	- 60marks
Total	**- 100marks**

Conditions of evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on Internal test. This assessment and score process should be completed after completing 50% of syllabus of the courses and within 45 working days of semester program

b). The second component (C2) of assessment is for 20% marks. This shall be based on Skill Development. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c). During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d). In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students will be provided with answer scripts and Skill development records, graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment /project work etc.

Evaluation Pattern of VI Sem Internship

Assessment Criteria	**Marks**
C 1 - Communication Skills/ Presentations	10
C 2 - Viva Voce	10
C 3 – Project Report	30
Total	**50**

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B. Com V/VI Semester DSC, DSE & Voc

Question Paper Pattern

Time: 2 1/2 Hours **Max. Marks: 60**

PART – A

Answer any FIVE of the following questions. Each question carries 2 marks.

(5x2= 10 Marks)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

PART – B

Answer any **TWO** of the following questions. Each question carries **10 Marks**.

(2x10 =20 Marks)

8. _____
9. _____
10. _____
11. _____

PART – C

Answer any **TWO** of the following questions. Each question carries **15 Marks**.

(2x15 =30 Marks)

12. _____
13. _____
14. _____
15. _____

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Date:26-08-2023

Proceedings of Board of Studies Meeting - 07

The Seventh Board of Studies Meeting was convened on 26th August 2023 in Business Lab at 10:30 am. A total of 07 members were present offline and 02 members were present online for the meeting.

The agenda of the meeting was approval of B. Com V & VI Semester Syllabus as per NEP Regulations framed by BoS in Commerce UoM, Mysuru, for the academic year 2023-24. The Board Members took up the agenda for discussion in detail and the following decisions were made.

➢ Following Agenda were discussed in the meeting:

1. Approval of B. Com Course Structure 2023-2024.
2. Approval of B. Com V & VI Sem Syllabus
3. Approval of distribution of FEIA paper in two semesters.
4. Approval of list of Board of Examiner Committee.
5. Approval of Question Paper pattern.
6. Any other matters.

Approval of B. Com Course Structure 2023-2024.

1. The proposed B. Com Course Structure was approved by the BoS members.
2. Discussed about the Credit of the subject and L:T:P pattern.
3. Discussed about internship in VI semester

➢ Approval of B. Com V & VI Sem Syllabus:

- Financial Management- In module 3 sources of finance should be included
- Income Tax-I – Module 5 of V semester to be replaced with module 2 of VI semester
- Auditing- No Changes
- Accounting-I (E)- No Changes

Chairperson
BOS/BOE in Commerce
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru-570 012

- Finance- FM (E)- No Changes
- Marketing-(E)- No Changes
- Human Resource-(E)- No Changes
- Analytics-BR (E)- No Changes
- Advanced Financial Management- Change in hours of lectures
- Income tax-II - Module 5 of V semester to be replaced with module 2 of VI semester
- Management Accounting- Inclusion of Marginal Costing. Management Audit and Reports on Management was removed.
- Accounting- II (E)- Re-arrangement of modules
- Finance- IM (E)- No Changes
- Marketing-CRM (E)- No Changes
- Human Resource-CD (E)- No Changes
- Analytics-HR (E)- No Changes
- Investment Management - Re-arrangement of modules

- **Approval of list of Board of Examiner Committee.**
  - The proposed BoE members with new inclusions were approved.
- **Approval of Question Paper pattern.**
  - Same pattern was approved.
- **Approval of any other matters.**

Distribution of FEIA classes into III and IV semester.
The discussion was successful and BoS meeting concluded by 1:00 pm.

Chairperson
BOS/BOE in Commerce
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru-570 012

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Department of Commerce
Board of Studies Meeting - Attendance

Date: 26-08-2023

Sl.No.	Name and Address	Designation	Signature
1	**Major. B.R. NIKIL** Assistant Professor Department of Commerce SBRR Mahajana First Grade College, **(Autonomous)**, Jayalakshmipuram, Mysuru -12	Chairman	
2	**Dr. NAGARAJA N** Professor DoS in Commerce, University of Mysore, Manasagangothri, Mysuru-570006.	Member	
3	**Sri. R. RAJESH** Chartered Accountant B S Ravikumar & Associates, Mysuru #73, 2nd Floor, Sri Madhvesha Complex, Nazarbad Main Road, Mysuru-570010.	Member	R. Rajesh
4	**Dr. SRINIVAS K T** Associate Professor & Chairman Department of Studies in Commerce, Davangere University, Davangere.	Member	-ONLINE-
5	**Dr. PARAMESHWARA** Associate Professor Department of Commerce, Mangalore University, Konaje Mangalore.	Member	-ONLINE-

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Department of Commerce
Board of Studies Meeting - Attendance

Date: 26-08-2023

6	**Smt. NANDINI R MUTTUR** Partner Geartech Solutions, Hebbal Industrial Area, Mysuru	Member	N.R. Muttur
7	**Mr. N ROOPESH KUMAR** Assistant Professor and Head of the Department. SBRR Mahajana First Grade College (Autonomous), PG centre, Mysuru.	Member	ABSENT
8	**Smt. REKHA B** Assistant Professor Department of Commerce SBRR Mahajana First Grade College, **(Autonomous)**, Jayalakshmipuram, Mysuru -12	Member	
9	**Smt. VASAGI S** Assistant Professor Department of Commerce SBRR Mahajana First Grade College, **(Autonomous)**, Jayalakshmipuram, Mysuru -12	Member	S.V
10	**Smt. SHAMBHAVI P BHOUNSLE** Assistant Professor Department of Commerce SBRR Mahajana First Grade College, **(Autonomous)**, Jayalakshmipuram, Mysuru -12	Member	Shambhavi

Chairperson
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SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru-570 012

DEPARTMENT OF COMPUTER SCIENCE

Motto

Technology for Transformation

Vision

Information Technology for Better Future

Mission

Imparting Quality and Ethical Based Education all the way through Technology

Equipping the students for a Demanding Career

Empowering the students with Professional Touch to become Successful Entrepreneurs

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis – Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions – Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research – Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5: Use of Modern Techniques/Tools – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO 6: Impact of Science on Society – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO 7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO 8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO 9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning – Engage in the art of self-directed learning.

Objectives: Computer Science

1. To provide foundation of computing principles for using information systems & enterprise software effectively.
2. Help students in analyzing the requirements for system programming, learn modern methods of information processing and its applications.
3. Provide students with an option to specialize in various domains of computers.
4. To produce outstanding computer scientists, who can apply the theoretical knowledge in solving real-time problems and in developing standalone live projects.
5. To build entrepreneurs by developing among students the programming techniques, software developing skills and problem-solving skills.
6. To prepare students who wish to pursue further studies and career in computer science and related subjects.

List of BoS Members

Sl. No.	Category	Name & Designation	Address for Communication	e-Mail & Mobile No.
1	Chairperson	Smt. Shruthy Poonacha Assistant Professor & HoD	Department of Computer Science SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	shruthypoonacha.fgc@mahajana.edu.in 9886367273
2	Member	Smt. Radhika Rani Assistant Professor	Department of Computer Science SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	radhikarani.fgc@mahajana.edu.in 9538737927
3		Smt. Rachana C R Associate Professor	Department of Computer Science SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	rachanacr@gmail.com 8095645644
4		Sri. Manjunath K S Assistant Professor	Department of BCA SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	manjunathks.fgc@mahajana.edu.in 9900852285
5	Nominee by the Vice Chancellor	Smt. Hamsaveni L Assosiate Professor	DoS in Computer Science Manasagangotri, University of Mysore, Mysuru – 570006	hamsa1367@gmail.com 9448665767

6	Two Experts from Other University	Sri. Anil Kumar R J Assistant Professor	Department of Computer Science Government Boy's College (Autonomous), Mandya – 571401	anilkumar.rj@gmail.com 9886267773
7		Smt. Vanishree K S Assistant Professor	Department of Computer Science Government First Grade College, Bapuji Nagar, Shivamogga - 577201	vanishree.kss@gmail.com 9448113005
8	One Person from Industry/ Corporate Sector/Allied Area	Dr. Dinesh R Principal Engineer	Samsung Electro Mechanics, WTC, Brigade Gateway Campus, Malleshwaram, Bengaluru - 560055	dr.dineshr@gmail.com 9986678100
9	Alumnus	Sri. Santhosh Kumar Lead Software Engineer	Fidelity Investments Manyatha Tech Park, Hebbal Outer Ring Road, Nagwara, Bengaluru - 560045	santhoshkavempu@gmail.com 9986979735

Course Structure (NEP)

Discipline Specific Courses (DSC), Open Elective (OE) and Skill Enhancement Course (SEC)

I Year

Course Code, Type and Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	L: T:P	C1	C2	C3		
Computer Science – I Sem									
212149	**DSC(1)** - Computer Fundamentals and Programming in C	**4**	**0**	**4:0:2 (6 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hours**	**150**
	DSC(1) Lab - C Programming Lab	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
OE(1)	Office Automation **21OECMS101** C Programming Concepts **21OECMS102** **(Any 1 to be opted)**	**3**	**0**	**3:0:0 (3 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hours**	**100**
Computer Science – II Sem									
212249	**DSC(2)** - Data Structures using C	**4**	**0**	**4:0:2 (6 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hours**	**150**
	DSC(2) Lab - Data Structures Lab	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
OE(2)	Web Designing **21OECMS201** e-Commerce **21OECMS202** **(Any 1 to be opted)**	**3**	**0**	**3:0:0 (3 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hours**	**100**
Computer Science – I/II Sem									
SEC(1)	Digital Fluency **21DFLF94**	**1**	**2**	**1:0:1 (2 Credits)**	**10**	**15**	**25**	**1 Hour**	**50**

DSC(1) Syllabus for B.Sc. Computer Science (Basic and Honors)

Semester I

Course Code: 212149	**Course Title:** **DSC(1) -** Computer Fundamentals and Programming in C (Theory) **DSC(1) Lab** - C Programming Lab (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Acquire knowledge on computers and exhibit the potential of designing an algorithmic solution to a problem.

CO 2: Design and develop C programs using various Datatypes, Input Output Statements, Operators and Expressions.

CO 3: Contrivance C programs using Control Structures, 1D Array, 2D Array and String Functions.

CO 4: Develop and implement C Programs using concepts like Pointers, User Defined Functions, Recursion and User Defined Datatypes.

Course Content

Content	Hours
UNIT - 1	
Fundamentals of Computers: Introduction to Computers - Computer Definition, Characteristics of a Computer, Applications of a Computer, Generations of Computers, Types of Computers, Basic Organization of a Digital Computer; Number Systems – Different Types, Conversion From One Number System To Another; Computer Codes – ASCII; Boolean Algebra – AND, OR and NOT with Truth Tables; Types of Software – System Software and Utility Software; Computer Languages - Machine Level, Assembly Level & High Level Languages; Translators – Assembler, Interpreter and Compiler; Steps in Problem Solving, Planning a Computer Program – Algorithm (Features, Writing an Algorithm, Performance) and Flowchart with Examples. Skill Based/ Participative/Experimental Learning – Case Study on Problem Solving Steps & Algorithms.	**14**
UNIT – 2	
Introduction to and Basic Concepts in C Programming: Features of C; Structure of a C Program with Examples, Compilation process in C; C Character Set; C tokens - Keywords, Identifiers, Constants and Variables; Data types; Declaration & Initialization of Variables. **Input and Output Statements:** Formatted I/O Functions - printf() and scanf(), Control Strings and Escape Sequences, Output Specifications with printf(); Unformatted I/O Functions - getchar(), putchar(), gets() and puts(). **C Operators & Expressions:** Arithmetic Operators; Relational Operators; Logical Operators; Assignment Operators; Increment & Decrement Operators; Bitwise Operators; Conditional Operator; Special Operators; Operator Precedence and Associativity; Type Conversion. Skill Based/ Participative/Experimental Learning – Group Assignment.	**14**

UNIT - 3	
Control Structures: Decision Making Statements - simple if, if else, nested if else, else if ladder, switch; break & continue statements; Looping Statements - Entry and Exit Controlled Statements: while, do-while, for and nested loops. **Arrays:** One-Dimensional Array - Declaration, Initialization, Memory Representation and Row & Column Major Addressing; Two-Dimensional Array - Declaration, Initialization and Memory Representation. **Strings:** Declaring & Initializing String Variables; String Handling Functions - strlen, strcmp, strcpy, strcat, strncpy, strncmp and strncat; Character handling functions - toascii, toupper, tolower, isalpha, isnumeric. Skill Based/ Participative/Experimental Learning – Activity to understand various Control Structures.	**14**
UNIT - 4	
Pointers in C: Understanding Pointers - Declaring and Initializing Pointers, Accessing Address and Value of Variables Using Pointers; Pointers and Arrays; Pointer Arithmetic; Advantages and Disadvantages of Using Pointers. **User Defined Functions:** Need; Format; Components - Return Type, Name, Parameter List, Function Body, Return Statement and Function Call; Categories - With and Without Parameters and Return Type; Recursion; Difference between Iterative and Recursive Functions. **User Defined Data Types:** Structures - Definition, Advantages, Declaring Structure Variables, Accessing and Initializing Structure Members, Array and Structures. Unions - Definition; Difference Between Structures and Unions. Skill Based/ Participative/Experimental Learning – Quiz.	**14**

Text Books:

1. Computer Fundamentals: Anita Goel, Pearson Publication.
2. Problem Solving with C: M T Somashekara, D S Guru and K S Manjunatha, PHI Publication.
3. C in Depth: S K Srivastava and Deepali Srivastava, BPB Publications.

References:

1. Computer Fundamentals: Pradeep K Sinha and Priti Sinha, 6th Edition, BPB Publication.
2. Programming in C: V Rajaraman, PHI Publication.
3. Programming in C: Ashok N. Kamthane, Pearson Publication.
4. https://www.w3schools.com/c/c_intro.php
5. https://www.tutorialspoint.com/cprogramming/index.htm
6. https://www.youtube.com/watch?v=KJgsSFOSQv0
7. https://www.youtube.com/watch?v=eEo_aacpwCw

C Programming Lab

Part A

Write a C Program to:

1. Read and print different Datatypes.
2. Demonstrate Assignment, Arithmetic and Increment & Decrement Operator.
3. Demonstrate if-else statement.
4. Demonstrate else-if ladder.
5. Demonstrate switch statement.
6. Demonstrate do-while loop.
7. Demonstrate while loop.
8. Demonstrate for loop.
9. Implement Single Dimensional Array.
10. Implement Two Dimensional Array.

Part B

Write a C Program to:

1. Find the length of a string without using built in function.
2. Demonstrate various string built-in functions.
3. Demonstrate the use of pointers.
4. Implement a function without parameters and return type.
5. Implement a function with parameters and without return type.
6. Implement a function without parameters and with return type
7. Implement a function with parameters and return type.
8. Demonstrate the difference between Call by Value and Call by Reference.
9. Demonstrate recursion.
10. Demonstrate the difference between Structure and Union.

Note: Student has to execute all Programs in each part to complete the Lab Course.

Course Articulation Matrix - 212149

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	2	-	1	1	1	1	1	1	1	2
CO 2	2	2	2	-	2	-	-	-	2	2	-	2
CO 3	2	2	1	1	2	1	-	1	2	2	-	2
CO 4	2	2	1	-	2	1	-	1	1	1	-	2
Weighted Average	**2**	**2**	**1.5**	**1**	**1.75**	**1**	**1**	**1**	**1.5**	**1.5**	**1**	**2**

OE(1) Computer Science Syllabus for All Programs (Except Science)

Semester I

Course Code: 21OECMS101	**Course Title: OE(1)** - Office Automation
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Acquire knowledge on computers & office automation tools and exhibit the potential to use a word processor for creating various types of documents.
CO 2: Analyze and use spreadsheets for performing computational tasks.
CO 3: Customize and create a presentation on a desired topic.

Course Content

UNIT - 1	**14 HOURS**
Introduction, Block diagram of a computer, Input and output devices, memory and storage devices, Types of software, Introduction to operating system – functions, types of operating system and examples. Introduction to word processing – creating and saving a document, formatting a document – Line spacing, paragraph, Fonts, inserting symbols, header and footer, shape, Tables, Find and replace, Mail merge, saving a document in different formats.	
UNIT - 2	**14 HOURS**
Introduction to spread sheet – entering different types of data like text, numbers, date, functions and formulae, different categories of functions, chart - creating and formatting a chart, filter, working with single and multiple work books, cell referencing, printing and previewing a document.	
UNIT - 3	**14 HOURS**
Introduction to presentation tools - creating and viewing a presentation, applying design template, formatting options, inserting different objects in a presentation, customize a presentation, adding audio to a presentation, Slide animation, preview Slide transitions Slide show options, adding effect to presentation.	

Text Books:

1. Computer Fundamentals and Office Automation: Dr. R Deepalakshmi, Charulatha Publications.
2. Office Automation: Dr. P Rizwan Ahmed, Margham Publications.

References:

1. Computer Basics with Office Automation: Archana Kumar, Dreamtech Press, 1st Edition.
2. The Handbook of Office Automation: Ralph Tomas Reilly, iUniverse Publication, 1st Edition.
3. https://www.youtube.com/watch?v=eEo_aacpwCw
4. https://www.youtube.com/watch?v=EeiLMV81Ujw
5. https://www.youtube.com/watch?v=Vl0H-qTclOg
6. https://www.youtube.com/watch?v=XF34-Wu6qWU

Course Articulation Matrix – 21OECMS101

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	2	2	-	3	-	-	1	1	1	-	2
CO 2	2	2	1	-	3	-	-	-	1	1	1	2
CO 3	3	2	3	-	3	2	1	2	1	2	1	2
Weighted Average	**2**	**2**	**2**	**-**	**3**	**2**	**1**	**1.5**	**1**	**1.33**	**1**	**2**

Course Code: 21OECMS102	**Course Title: OE(1) -** C Programming Concepts
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Acquire knowledge on computers and elementary concepts of C programming.
CO 2: Develop C programs with input output statements, operators, expressions and control structure.
CO 3: Implement simple C programs with array, strings and pointers.

Course Content

UNIT - 1	**14 HOURS**
Fundamentals of Computers: Introduction to Computers -Hardware, software System software, Application software, Utility software, Operating System; Computer Languages - Machine Level, Assembly Level & High-Level Languages, Translator Programs – Assembler, Interpreter and Compiler; Planning a Computer Program – Algorithm and Flowchart with Examples. **Introduction to C Programming:** Over View of C; History and Features of C; Structure of a C Program with Examples; Creating and Executing a C Program; Compilation process in C. **C Programming Basic Concepts:** C Character Set; C tokens - keywords, identifiers, constants, and variables; Data types; Declaration & initialization of variables; Symbolic constants.	
UNIT - 2	**14 HOURS**
Input and output with C: Formatted I/O functions - printf and scanf, control stings and escape sequences, output specifications with printf functions; Unformatted I/O functions to read and display single character and a string - getchar, putchar, gets and puts functions **C Operators & Expressions:** Arithmetic operators; Relational operators; Logical operators; Assignment operators; Increment & Decrement operators; Bitwise operators; Conditional operator; Special operators; Operator Precedence and Associatively; Evaluation of arithmetic expressions; Type conversion. **Control Structures:** Decision making Statements - Simple if, if_else, nested if_else, else_if ladder, Switch-case, goto, break & continue statements; Looping Statements - Entry controlled and Exit controlled statements, while, do-while, for loops, Nested loops.	
UNIT - 3	**14 HOURS**
Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays - Declaration, Initialization and Memory representation. **Strings:** Declaring & Initializing string variables; String handling functions - strlen, strcmp, strcpy and strcat; Character handling functions - toascii, toupper, tolower, isalpha, isnumeric etc. **Basics of Pointers in C:** Understanding pointers - Declaring and initializing pointers, accessing address and value of variables using pointers; Pointer Arithmetic; Advantages and disadvantages of using pointers.	

Text Books

1. Computer Fundamentals: Anita Goel, Pearson Publication.
2. Problem Solving with C: M T Somashekara, D S Guru and K S Manjunatha, PHI Publication.
3. C in Depth: S K Srivastava and Deepali Srivastava, BPB Publications.

References

1. Computer Fundamentals: Pradeep K Sinha and Priti Sinha, 6th Edition, BPB Publication.
2. Programming in C: V Rajaraman, PHI Publication.
3. Programming in C: Ashok N. Kamthane, Pearson Publication.
4. https://www.youtube.com/watch?v=r5nXIzK3DoE
5. https://www.youtube.com/watch?v=fdSPUKSe_Xk
6. https://www.youtube.com/watch?v=8PopR3x-VMY

Course Articulation Matrix – 21OECMS102

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	-	-	1	1	1	1	-	1	1	2
CO 2	2	2	1	-	1	-	-	-	-	-	-	2
CO 3	1	2	1	-	1	-	-	-	1	-	-	2
Weighted Average	**1.66**	**1.66**	**1**	**-**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**2**

DSC(2) Syllabus for B.Sc. Computer Science (Basic and Honors)

Semester II

Course Code: 212249	**Course Title:** **DSC(2) -** Data Structure using C (Theory) **DSC(2) Lab -** Data Structures Lab (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Relate Data Structures with real life scenarios, design algorithms using array data structure and identify & implement effective searching-sorting algorithm for various applications.

CO 2: Analyze and apply the concept of stack and queues while solving real-time problems.

CO 3: Acquire knowledge on memory allocation & de-allocation methods and apply knowledge of linked list on various applications.

CO 4: Analyze and implement the concept of Binary Trees in real-world scenarios.

Course Content:

Content	Hours
UNIT - 1	
Introduction To Data Structures: Definition; Types - Primitive & Non-Primitive, Linear and Non-Linear; Operations on Data Structures, Abstract Data Type (ADT). **Arrays:** Various Types and their Memory Representation; 1D Array Operations - Traversing Linear Arrays; Sorting – Bubble Sort, Selection Sort, Insertion Sort, Merge Sort, Quick Sort; Searching – Sequential Search, Binary Search; Sparse Matrices – Definition, Advantage. Skill Based/ Participative/Experimental Learning – Activity to understand the various types of Data Structures.	**14**
UNIT - 2	
Stacks: Basic Concepts – Definition, Representation, Operations; Infix and Postfix Notations; Applications of Stack - Conversion from Infix to Postfix, Evaluation of Postfix Expression. **Queues:** Basic Concepts – Definition, Representation, Types of Queues – Simple Queue, Circular Queue, Double Ended Queue, Priority Queue; Operations on Simple Queue. Skill Based/ Participative/Experimental Learning – Class Level Seminar on Stack and Queue.	**14**
UNIT - 3	
Dynamic Memory Allocation: Memory Allocation and De-Allocation Functions – malloc(), calloc(), realloc() and free(); Garbage Collection. **Linked List:** Basic Concepts – Definition, Types of Linked Lists - Singly Linked List, Doubly Linked List, Circular Linked List; Representation of Linked List in Memory; Operations on Singly Linked Lists – Insertion, Deletion. Skill Based/ Participative/Experimental Learning – Quiz.	**13**

UNIT - 4	
Trees: Definition; Tree Terminologies – edge, node, root node, parent node, ancestors of a node, siblings, terminal & non-terminal nodes, degree of a node, level, path, depth, height. **Binary Tree:** Type of Binary Trees - Strict Binary Tree, Complete Binary Tree, Binary Search Tree; Array and Linked List Representation of Binary Tree; Traversal of Binary Tree - Preorder, Inorder and Postorder Traversal, Reconstruction of a Binary Tree when Inorder and Postorder/Preorder are given. Skill Based/ Participative/Experimental Learning – Group Assignment/Case Study on Tree Data Structure.	**15**

Text Books:

1. Fundamentals of Data Structures: Ellis Horowitz, Sartaj Sahani, Computer Science Press.
2. Data Structures through C in Depth: S K Srivastava and Deepali Srivastava, BPB Publications

References:

1. Data Structures using C: Aaron M Tanenbaum, Yedidyah Langsam, Moshe J Augenstein, Pearson Publications.
2. Introduction to Data Structures in C: Ashok N Kamathane, Pearson Publications.
3. Data Structures using C – 1000 Problems and Solutions: Sudipta Mukherjee, Tata McGraw Hill Publications.
4. https://www.aminotes.com/2017/10/data-structures-study-materials.html
5. https://www.tutorialspoint.com/data_structures_algorithms/index.htm
6. https://www.youtube.com/c/SimplyCoding
7. https://www.youtube.com/watch?v=dM-LYxHnKcU

Data Structures Lab

Part A:

Write a C Program to:

1. Demonstrate an Array Data Structure.
2. Search an element using Linear Search Technique.
3. Search an element using Binary Search Technique.
4. Sort the given list using Bubble Sort Technique.
5. Sort the given list using Selection Sort Technique.
6. Sort the given list using Insertion Sort Technique.
7. Sort the given list using Merge Sort Technique.
8. Sort the given list using Quick Sort Technique.

Part B:

Write a C Program to:

1. Demonstrate Stack Operations.
2. Implement Tower of Hanoi.
3. Convert an Infix Expression to Postfix Expression.
4. Demonstrate Operations of a Simple Queue.
5. Demonstrate Operations of a Circular Queue.
6. Demonstrate the use of a Dynamic Array.
7. Demonstrate Operations of a Linear Linked List.
8. Display Traversal of a Tree.

Note: Student has to execute all Programs in each part to complete the Lab Course.

Course Articulation Matrix - 212249

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	-	2	1	-	-	2	2	-	2
CO 2	3	3	2	-	2	2	-	1	2	2	-	1
CO 3	2	2	1	-	2	1	-	-	1	2	-	1
CO 4	1	3	2	1	2	2	1	1	2	2	1	2
Weighted Average	**2**	**2.5**	**1.5**	**1**	**2**	**1.5**	**1**	**1**	**1.75**	**2**	**1**	**1.5**

OE(2) Computer Science Syllabus for All Programs (Except Science)

Semester II

Course Code: 21OECMS201	**Course Title: OE(2) -** Web Designing
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):
CO 1: Acquire basic knowledge on internet, HTML and XHTML Programming.
CO 2: Analyze a web page and identify its elements & attributes.
CO 3: Create webpages using CSS and java script (client-side programming).

Course Content

UNIT - 1	**14 HOURS**
Fundamentals: Internet, WWW, Web Browsers and Web Servers, URLs, MIME, HTTP, Security, the Web Programmers Toolbox. Web Development Introduction, Introduction to HTML and XHTML, Basic syntax, Standard Structure of the Program, Basic Formatting Tags, Color Coding, HTML/XHTML-Grouping Using Div Span, HTML-Lists, HTML Image Mapping, Hyperlink, HTML-Table, Forms, Frames.	
UNIT - 2	**14 HOURS**
Introduction to CSS, Levels of style sheets, Style specification formats, Selector forms, Property value forms, Font properties, List properties, Color, Alignment of text, The Box model, Background images, <Span> and <Div> tags. The Basics of JavaScript: Overview of JavaScript, Object orientation and JavaScript, Syntactic characteristics, Primitives, operations, and expressions, Screen output and keyboard input, Control statements, Arrays, Functions in JavaScript.	
UNIT - 3	**14 HOURS**
The JavaScript Execution Environment, Button elements, Text box and Password elements, Dynamic documents with JavaScript: Introduction, Positioning Elements, Moving Elements, Element visibility, Changing Colors and Fonts, Dynamic content, Locating the Mouse cursor, reacting to a Mouse click, Slow movement of elements, Dragging and Dropping elements.	

Text Books:

1. Programming the World Wide Web: Robert W Sebesta, 4th Edition, Pearson Education, 2008.
2. HTML, CSS & JavaScript Web Publishing: Laura Lemay, Rafe Colburn and Jennifer Kyrnin, BPB Publications.

References:

1. Internet & World Wide Web How to Program: M Deitel, P J Deitel, A B Goldberg, 4th Edition, Pearson Education, 2004.
2. Web Programming Building Internet Applications: Chris Bates, 3rd Edition, Wiley India, 2007.
3. https://www.geeksforgeeks.org/design-a-web-page-using-html-and-css/
4. https://blog.hubspot.com/marketing/web-design-html-css-javascript

Course Articulation Matrix – 21OECMS201

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	1	-	1	1	1	1	1	1	-	2
CO 2	2	1	1	-	1	-	-	-	1	1	-	2
CO 3	1	1	1	-	1	-	-	-	1	1	-	2
Weighted Average	**1.66**	**1**	**1**	**-**	**1**	**1**	**1**	**1**	**1**	**1**	**-**	**2**

Course Code: 21OECMS202	**Course Title: OE(2) -** e-Commerce
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Acquire knowledge on e-commerce and its various modes.
CO 2: Classify and analyze real-time problems based on various types of e-commerce.
CO 3: Interpret the knowledge on e-commerce infrastructure and impact of internet & technology on e-commerce, e-business and e-payments.

Course Content

UNIT - 1	**14 HOURS**
Introduction to e-commerce, the difference between e-commerce and e-business, Technological building blocks underlying e-commerce: the Internet, Web, and Mobile Platform, Major Trends in e-commerce, Unique Features of e-commerce Technology. Modes of electronic commerce: Overview, Electronic data interchange (EDI), e-commerce with www/Internet. Payments and Security: Electronic cash and Electronic payment Schemes: Internet monetary payment and Security requirements, payment and purchase order process, Online electronic cash.	
UNIT - 2	**14 HOURS**
PES of e-commerce: Business-to-Consumer (B2C) , Business-to-Business (B2B) , Consumer-to-Consumer (C2C), Mobile e-commerce (M-commerce), Social e-commerce, Local e-commerce. Consumer-oriented e-commerce: Introduction, Traditional retailing and e-retailing, benefits of e-retailing, Key success factors, Models of e-retailing, features of e-retailing, developing a consumer-oriented e-commerce system, The PASS model.	
UNIT - 3	**14 HOURS**
e-Commerce Infrastructure: The Internet, Technology Background , Internet – Key Technology concepts, TCP/IP, IP addresses, Domain names, DNS and URLs, Client Server Computing, Cloud computing model, Mobile platform. Internet and Web: Hypertext, HTML, XML, Web servers and clients, Web browsers, Communication tools – Email, messaging apps.	

Text Books:

1. E-Commerce 2020-2021: Laudon, Kenneth C and Carol Guercio Traver, Pearson Publications, 2020.

References:

1. Frontiers of Electronic Commerce: Ravi Kalakota, Andrew B, Addison Wesley Publications, 1996.
2. https://www.gasckovilpatti.com/studymaterial/commerce/II%20MCOM%20E%20COMMERCE%20pKCM33.pdf
3. http://www.simplynotes.in/e-notes/mbabba/electronic-commerce/
4. https://onlinecourses.swayam2.ac.in/cec19_cm01/preview

Course Articulation Matrix – 21OECMS202

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	-	-	1	2	-	2	1	1	1	2
CO 2	2	1	1	-	-	2	-	2	1	2	1	2
CO 3	1	1	-	-	1	1	1	2	-	1	-	2
Weighted Average	**1.66**	**1**	**1**	**-**	**1**	**1.66**	**1**	**2**	**1**	**1.33**	**1**	**2**

Continuous Formative Evaluation/Internal Assessment (DSC & OE)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the principal. The principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

  Part-A Program(C1): 10 marks

  Part-B Program(C2): 10 marks + Record: 05 marks = 15 marks

- The student is evaluated for 25 marks in C3 as per the following scheme:

Assessment Criteria		Marks
Program - 1 from Part A	Writing the Program	10
Program - 2 from Part B		
Execution and Formatting (Any one program: Decided by the External Examiner)		10
Viva Voce		05
TOTAL		**25**

DSC Computer Science Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** $2\frac{1}{2}$ Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part - A and Part – B.
- Part – A: Should consist of 12 Questions (3 Questions from each Unit).
- Part – B: Should consist of 4 Main Questions (1 from Each Unit) with 2 Sub Questions where internal split is permitted.

PART – A

Answer any EIGHT Questions. Each Question carries 2 Marks. 8Q X 2M = 16 Marks

1. a.
   b
   c.
   .
   .
   k.
   l.

PART – B

Answer ALL the Questions. Each Main carries 11 Marks. 4Q X 11M = 44 Marks

2. a.
   b.

   OR

   c.
   d.

3. a.
   b.

   OR

   c.
   d.

4. a.
   b.

   OR

   c.
   d.

5. a.
   b.

   OR

   c.
   d.

OE Computer Science Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** $2\frac{1}{2}$ Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part – A and Part – B.
- Part – A: Should consist of 12 Sub Questions (4 Questions from each Unit).
- Part – B: Should consist of 3 Main Questions (1 from Each Unit) with 2 Sub Questions where internal split is permitted.

PART – A

Answer any NINE Questions. Each Question carries 2 Marks. 9Q X 2M = 18 Marks

1. a.
   b
   c.
   .
   .
   k.
   l.

PART – B

Answer ALL the Questions. Each Main Carries 14 Marks. 3Q X 14M = 42 Marks

2. a.
   b.

   OR

   c.
   d.

3. a.
   b.

   OR

   c.
   d.

4. a.
   b.

   OR

   c.
   d.

SKILL ENHANCEMENT COURSE (SEC) for All Programs

NOTE: This Course will be handled by the Department of Computer Science for BBA, BCom., BSc. (All Combinations) and BA (All Combinations).

Course Code: 21DFLF94	**Course Title: SEC(1)** - Digital Fluency
Course Credits (L:T:P): 02 (1:0:1)	**Hours of Teaching/Week:** 1 Hour (Theory) 2 Hours (Practical)
Total Contact Hours: 14 Hours (Theory) 28 Hours (Practical)	**Formative Assessment Marks:** 25
Exam Duration: 1 Hour (Theory)	**Semester End Examination Marks:** 25

Course Outcomes (COs):

CO 1: Acquire knowledge on key concepts of Artificial Intelligence (AI), Big Data Analytics (BDA), Internet of Things (IoT), Cloud Computing and Cyber Security.

CO 2: Identify the applications of Artificial Intelligence (AI), Big Data Analytics (BDA), Internet of Things (IoT), Cloud Computing and Cyber Security.

CO 3: Develop holistically by learning essential skills such as Effective Communication, Creative Problem Solving, Innovative/Critical Design Thinking and Teamwork.

Course Content: In concurrence with Digital 101 on Nasscom 101 environment

Sl.no	Content	Details of topic	Duration
1.	**Registration**	Future Skills Course Registration Process	
2.	**Module 1: Emerging Technologies**	Overview of Emerging Technologies: i. Artificial Intelligence, Machine Learning, Deep Learning, ii. Database Management for Data Science, Big Data Analytics, iii. Internet of Things (IoT) and Industrial Internet of Things (IIoT) iv. Cloud computing and its service models v. Cyber Security and Types of cyber attack	05 Theory hours and 10 practical hours
3.	**Module 2: Applications of Emerging Technologies**	Applications of emerging technologies: i. Artificial Intelligence ii. Big Data Analytics iii. Internet of Things iv. Cloud Computing v. Cyber Security	05 Theory hours and 10 practical hours
4.	**Module 3: Building Essential Skills Beyond Technology**	Importance of the following: i. Effective Communication Skills ii. Creative Problem Solving & Critical Thinking iii. Collaboration and Teamwork Skills iv. Innovation & Design Thinking v. Use of tools in enhancing skills	05 Theory hours and 10 practical hours

Reference: The learning resources made available for the course titled "Digital 101" on Future Skills Prime Platform of NASSCOM.

Pedagogy:

Flipped classroom pedagogy is recommended for the delivery of this course. For Every Class:

1. Before coming to the class students are expected to go through the content (both video and other resources) on the related topic and give the quiz (related to that topic) on Future Skills Prime Platform of NASSCOM.
2. Class room and practical activities are designed around the topic of the session towards Developing Better Understanding, Clearing Misconceptions and Discussions of Higher Order Thinking Skills like Application, Analysis, Evaluation and Design.

Assessment Pattern for Digital Fluency ONLY:

Assessment Criteria	Marks
C1: Test	10
C2(A): Practical Sessions: All activities from Module 1, Module 2 and Module 3 need to be completed by the students	05
C2(B): Final Assessment Test with 30 questions (30 min) on Future Skills Prime Platform. Students get maximum two attempts to obtain the certificate from NASSCOM-AICTE.	10
TOTAL	**25**

EVALUATION PATTERN FOR DIGITAL FLUENCY

Assessment	Marks
C1	10 Marks (Theory C1-Test)
C2	15 Marks (10 Marks for NASCOM Certificate + 5 Marks for Assignments)
C3	25 Marks (Final Exam)
Total	50 Marks

Course Articulation Matrix – 21DFLF94

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	1	-	-	2	1	1	1	1	-	-	2
CO 2	1	1	-	-	2	2	2	1	1	1	-	2
CO 3	3	3	2	1	1	3	1	3	3	3	1	2
Weighted Average	**1.66**	**1.66**	**2**	**1**	**1.66**	**2**	**1.33**	**1.66**	**1.66**	**1.33**	**1**	**2**

Continuous Formative Evaluation/Internal Assessment (SEC)

Total marks for SEC shall be based on continuous assessments and semester end examinations. The pattern is 50:50 for IA and Semester End Theory Examinations respectively.

	THEORY
Total Marks	50 Marks
Continuous Assessment – 1 (C1)	10 Marks
Continuous Assessment – 2 (C2)	15 Marks
Semester End Examination (C3)	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 30% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 50%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the principal. The principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	10	-	10
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	15	15
Total	10	15	25

- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

SEC Computer Science Theory Question Paper Pattern (All Programs)

Max. Marks: 25 Marks **Exam Duration:** 1 Hour

Instructions: Paper Setting

- The Question Paper consists of 3 Main Questions.
- Question 1: Should consist of 5 Questions (Multiple Choice Questions).
- Question 2: Should consist of 3 Questions (1 from Each Unit) where internal split is permitted.
- Question 3: Should consist of 3 Questions (1 from Each Unit) where internal split is permitted.

1. Answer all FIVE Questions. Each Question carries 1 Mark. 5Q X 1M = 5 Marks

a.
b.
c.
d.
e.

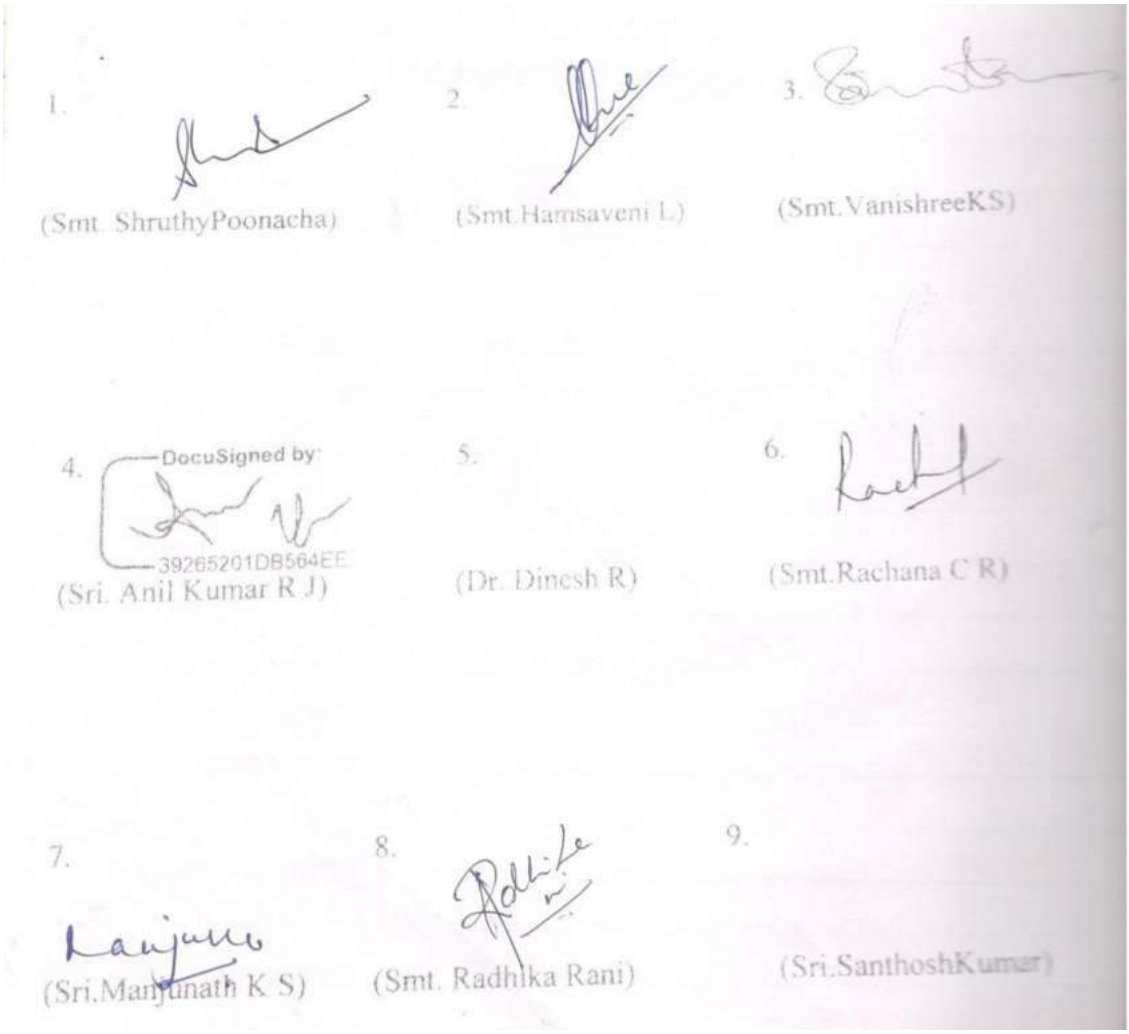
2. Answer any TWO Questions. Each Question carries 5 Marks. 2Q X 5M = 10 Marks

a.
b.
c.

3. Answer any ONE Question. Question carries 10 Marks. 1Q X 10M = 10 Marks

a.
b.
c.

APPROVED BY THE FOLLOWING BoS MEMBERS



DEPARTMENT OF COMPUTER SCIENCE

Motto

Technology for Transformation

Vision

Information Technology for Better Future

Mission

Imparting Quality and Ethical Based Education all the way through Technology

Equipping the students for a Demanding Career

Empowering the students with Professional Touch to become Successful Entrepreneurs

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis – Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions – Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research – Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5: Use of Modern Techniques/Tools – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO 6: Impact of Science on Society – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO 7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO 8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO 9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning – Engage in the art of self-directed learning.

Objectives: Computer Science

1. To provide foundation of computing principles for using information systems & enterprise software effectively.
2. Help students in analyzing the requirements for system programming, learn modern methods of information processing and its applications.
3. Provide students with an option to specialize in various domains of computers.
4. To produce outstanding computer scientists, who can apply the theoretical knowledge in solving real-time problems and in developing standalone live projects.
5. To build entrepreneurs by developing among students the programming techniques, software developing skills and problem-solving skills.
6. To prepare students who wish to pursue further studies and career in computer science and related subjects.

List of BoS Members

Sl. No.	Category	Name & Designation	Address for Communication	e-Mail & Mobile No.
1	Chairperson	Smt. Shruthy Poonacha Assistant Professor & HoD	Department of Computer Science SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	shruthypoonacha.fgc@mahajana.edu.in 9886367273
2	Member	Smt. Radhika Rani Assistant Professor	Department of Computer Science SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	radhikarani.fgc@mahajana.edu.in 9538737927
3		Smt. Rachana C R Associate Professor	Department of Computer Science SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	rachanacr@gmail.com 8095645644
4	Nominee by the Vice Chancellor	Smt. Hamsaveni L Assosiate Professor	DoS in Computer Science Manasagangotri, University of Mysore, Mysuru – 570006	hamsa1367@gmail.com 9448665767
5	Two Experts from Other University	Dr. Suresh K Assistant Professor	Department of Computer Science Christ University, Hosur Road, Bengaluru - 560029	suresh.kalaimani@gmail.com 9003310571
6		Dr. Lavanya P G Assistant Professor	Department of Computer Science Government Boy's College (A), Mandya – 571401	lavanyapggcm@gmail.com 9448006546

7	One Person from Industry/ Corporate Sector/Allied Area	Sri. Santhosh Kumar Lead Software Engineer	Fidelity Investments Manyatha Tech Park, Hebbal Outer Ring Road, Nagwara, Bengaluru - 560045	santhoshkavempu@gmail.com 9986979735
8	Alumnus	Sri. Mahendra J M Senior Associate	Morgan Stanley Advantage Services Oberoi Commerz II, Mohan Gokhale Road, We Work, Oberoi Garden City, Goregoan (East), Mumbai - 400063	jmmahendra.08@gmail.com 9066849377

Course Structure (NEP)

Discipline Specific Courses (DSC), Open Elective (OE) and Skill Enhancement Course (SEC)

II Year

Course Type, Code and Title		Hours/ Week		L:T:P (Credits)	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P		C1	C2	C3		
Computer Science – III Sem									
222349	**DSC(3) -** Object Oriented Programming in Java	**4**	**0**	**4:0:2 (6 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hours**	**150**
	DSC(3) Lab - Java Programming Lab	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
OE(3)	Python Programming Concepts **22OECMS301**	**3**	**0**	**3:0:0 (3 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hours**	**100**
Computer Science – IV Sem									
222449	**DSC(4) -** Database Management Systems	**4**	**0**	**4:0:2 (6 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hours**	**150**
	DSC(4) Lab - DBMS Lab	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
OE(4)	Fundamentals of Multimedia **22OECMS401**	**3**	**0**	**3:0:0 (3 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hours**	**100**
Computer Science – III/IV Sem									
SEC(2)	Artificial Intelligence **22AINS94**	**1**	**2**	**1:0:1 (2 Credits)**	**10**	**15**	**25**	**1 Hour**	**50**

DSC(3) Syllabus for B.Sc. Computer Science (Basic and Honors)

Semester III

Course Code: 222349	**Course Title:** **DSC(3)** - Object Oriented Programming in Java (Theory) **DSC(3) Lab** - Java Programming Lab (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Apply knowledge of object-oriented programming concepts like class, objects, methods, constructors and the relationship among them required for solving a specific problem using Java.

CO 2: Design and develop efficient java applications using inheritance, dynamic binding, polymorphism (method overloading and overriding) and packages.

CO 3: Design and develop GUI applications and handle events using java.

CO 4: Apply knowledge gained on I/O streams, implement the concept of multithreading and handle exceptions in an effective manner.

Course Content

Content	Hours
UNIT – 1	
Introduction to OOP and Java: Basic OOPs Concepts; Basics of Java Programming – Introduction, History, Applications, Editions, Features; Datatypes; Variables; Operators; Control Structures. **Objects and Classes:** Basics of Objects and Classes; Java Methods; Visibility Modifiers; Constructors; 'this' Reference; Finalizer; Inbuilt Classes like String, Character, Math, String Buffer, File, Arrays. Skill Based/ Participative/Experimental Learning – Activity to Understand OOP Concepts.	**15**
UNIT – 2	
Inheritance, Polymorphism and Packages: Inheritance – Introduction, Types, Super and Sub Class, Casting Objects; Object Class; Abstract Class; Interface; Dynamic Binding; Instance of Operator; Polymorphism – Introduction, Overloading, Overriding; Package in Java – Introduction, 'util' Package. Skill Based/ Participative/Experimental Learning – Quiz.	**14**
UNIT – 3	
Event and GUI Programming: Event Handling in Java – Classification of Events, Delegation Event Model, Event Classes, Listener Interface; GUI - Basics, Panels, Frames, Layout Managers: Flow Layout, Border Layout, Grid Layout, Components: Buttons, Check Boxes, Radio Buttons, Labels, Text Fields, Text Areas, Combo Boxes, Lists, Scroll Bars, Sliders, Windows, Menus, Dialog Box; Applet and its Life Cycle. Skill Based/ Participative/Experimental Learning – Design an Applet based solutions for a real-time problem.	**14**

UNIT – 4	
I/O Programming, Multithreading and Exception Handling: I/O Streams – Byte, Character; Random Access Files; Multithreading - Life Cycle of a Thread, Thread Class and Methods, Runnable Interface, Thread Synchronization; Generic Programming; Exception Handling- Introduction, Exception Handling with 'try catch finally'. Skill Based/ Participative/Experimental Learning – Group Assignment.	**13**

Text Books:

1. Object Oriented Programming with Java: Somashekara M T, D S Guru, Manjunatha K S, 1st Edition, PHI Learning 2017.
2. Programming with Java - A Primer: E Balagurusamy , 4th Edition, Tata McGraw Hill Publication.

References:

1. Core Java Volume I – Fundamentals: Cay S Horstmann, Prentice Hall.
2. Java 2 - The Complete Reference, Herbert Schildt, 5th Edition, Tata McGraw Hill Publication, 2017.
3. Java - The Complete Reference, Herbert Schildt, 7th Edition, Tata McGraw Hill Publication, 2017.
4. https://www.youtube.com/watch?v=eIrMbAQSU34
5. https://www.youtube.com/watch?v=GLT1DokhDTQ
6. https://www.w3schools.com/java/
7. https://www.javatpoint.com/java-tutorial

PART A: FUNDAMENTALS OF OOPs IN JAVA

Write a Java Program to:

1. Demonstrate if statement.
2. Demonstrate switch statement.
3. Demonstrate looping statement.
4. Implement user input operation.
5. Demonstrate the use of constructors.
6. Implement inheritance.
7. Implement method overloading.
8. Implement the concept of overriding.
9. Demonstrate the use of interface.
10. Illustrate some options of 'util' package.

PART B: EXCEPTION HANDLING & GUI PROGRAMMING

Create a Java Applet and:

1. Draw several shapes on the window.
2. Display information about yourself.
3. Draw grid lines.
4. Illustrate the use of textbox, check box and radio buttons.
5. Demonstrate the use of a frame with button operation.
6. Display movement of an object according to the arrow key pressed.
7. Demonstrate some mouse handling events.

Write a Java Program to:

8. Demonstrate Multithreading.
9. Catch an Array related Exception.
10. Handle exception using "try catch finally" method.

Note: Student has to execute a minimum of 8 programs in each part to complete the Lab course.

Course Articulation Matrix - 222349

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	-	3	-	-	-	1	1	-	1
CO 2	1	2	2	-	3	1	1	1	1	1	-	2
CO 3	2	3	2	1	3	-	-	1	2	2	1	2
CO 4	1	2	2	-	3	-	-	-	1	-	-	2
Weighted Average	**1.5**	**2.25**	**1.75**	**1**	**3**	**1**	**1**	**1**	**1.25**	**1**	**1**	**1.75**

OE(3) Computer Science Syllabus for All Programs (Except Science)

Semester III

Course Code: 22OECMS301	**Course Title: OE(3)** - Python Programming Concept
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Acquire basic knowledge on computers and python programming.
CO 2: Develop python programs with input output statements, various datatypes and control structure.
CO 3: Implement simple python programs with function and strings.

Course Content

UNIT – 1	**FUNDAMENTALS OF COMPUTERS**	**14 HOURS**
Introduction to Computers - Definition, Characteristics, Generations, Types, Basic Organization of a Digital Computer; Number Systems – Different Types, Conversion From One Number System To Another; Computer Code – ASCII; Boolean Algebra – Boolean Operators with Truth Tables; Types of Software; Computer Languages - Machine Level, Assembly Level & High Level Languages; Translators – Assembler, Interpreter and Compiler; Planning a Computer Program - Algorithm, Flowchart with Examples. **Python Basics:** - Introduction to Features and Applications of Python; Python Versions; Installation of Python; Python Command Line Mode and Python IDEs; Simple Python Program. Identifiers; Keywords; Statements and Expressions; Variables; Operators; Precedence and Association.		
UNIT – 2	**DATA TYPES AND CONTROL STRUCTURE**	**14 HOURS**
Data Types; Indentation; Comments; Built-in Functions - Console Input and Console Output, Type Conversions; Python Libraries; Importing Libraries with Examples; Illustrative Programs. **Python Control Flow:** Types of Control Flow; Control Flow Statements - if, else, elif, while loop, break statement, for loop statement; range() and exit() functions; Illustrative Programs.		
UNIT – 3	**FUNCTIONS AND STRINGS**	**14 HOURS**
Python Functions: Types of Functions; Function Definition - Syntax, Function Calling, Passing Parameters/Arguments, return statement; Default Parameters; Command line Arguments; Key Word Arguments; Illustrative Programs. **Strings:** Creating and Storing Strings; Accessing String Characters; str() function; Operations on Strings - Concatenation, Comparison, Slicing and Joining, Traversing; Format Specifiers; Escape Sequences; Raw and Unicode Strings; Python String Methods; Illustrative Programs.		

Textbooks:

1. Programming with Python: Neeraj Kushwaha, Evincepub Publishing.
2. Python Programming for Beginners: Thomas J. Stephenson, Amplitudo Ltd Publication.

References:

1. Computer Fundamentals: Pradeep K Sinha and Priti Sinha, 6th Edition, BPB Publication.
2. Think Python - How to Think Like a Computer Scientist: Allen Downey et al., 2nd Edition, Green Tea Press, 2015.
3. Introduction to Python Programming: Gowrishankar S et al., CRC Press, 2019.
4. https://www.greenteapress.com/thinkpython/thinkCSpy.pdf
5. http://scipy-lectures.org/intro/language/python_language.html
6. https://docs.python.org/3/tutorial/index.html

Course Articulation Matrix – 22OECMS301

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	-	2	1	1	1	1	1	1	2
CO 2	2	1	2	-	1	-	-	-	1	-	-	2
CO 3	1	1	2	-	1	-	-	-	1	-	-	2
Weighted Average	**1.66**	**1.33**	**1.66**	**-**	**1.33**	**1**	**1**	**1**	**1**	**1**	**1**	**2**

DSC(4) Syllabus for B.Sc. Computer Science (Basic and Honors)

Semester IV

Course Code: 222449	**Course Title:** **DSC(4)** - Database Management System (Theory) **DSC(4) Lab** - DBMS Lab (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Acquire knowledge on database, E-R diagram & its components. Identify entities & relationships and develop an E-R diagram for a given real-world problem.

CO 2: Implement simple queries using relational data model and relational algebra.

CO 3: Optimize solutions using the concept of Functional Dependencies & Normalization and acquire knowledge on how to effectively organize and store data.

CO 4: Formulate queries in SQL for database manipulation and Signify the importance of transaction processing & concurrency control techniques.

Course Content

Content	Hours
UNIT – 1	
Database Architecture: Introduction to Database System Applications. Characteristics and Purpose of Database Approach, People associated with Database System, Data Models, Database Schema, Database Architecture, Data Independence, Database Languages, Interfaces and Classification of DBMS. **E-R Model:** Basic Concepts: Entity, Entity Types, Entity Sets, Attributes, Types of Attributes, Key Attribute and Domain of an Attribute. Relationships between the Entities, Relationship Types, Roles and Structural Constraints, Degree and Cardinality Ratio of a Relationship, Weak Entity Types, E-R Diagram. Skill Based/ Participative/Experimental Learning – Industrial/Campus Visit.	**15**
UNIT – 2	
Relational Data Model: Basic Concepts, Characteristics of Relations, Relational Model Constraints: Domain Constrains, Key Constraints, Primary & Foreign Key Constraints, Integrity Constraints and Null Values. **Relational Algebra:** Basic Relational Algebra Operations, Set Theoretical Operations on Relations, JOIN Operations, Aggregate Functions and Grouping, Nested Sub Queries-Views. Skill Based/ Participative/Experimental Learning – Activity to understand various keys and basic relational algebra functions.	**13**

UNIT – 3	
Data Normalization: Anomalies in Relational Database Design, Decomposition, Functional Dependencies - Axioms, Minima and Maxima Covers, Normalization, First Normal Form, Second Normal Form, Third Normal Form, Boyce-Codd Normal Form. **Data Storage:** Introduction, Data Storage Tools, Smartphone Storage, Introduction to Cloud Storage. Skill Based/ Participative/Experimental Learning – Group Assignment.	**14**
UNIT – 4	
Query Processing Transaction Management: Introduction, Transaction Processing, Single User & Multiuser Systems, Transactions: Read & Write Operations, Need of Concurrency Control: The Lost Update Problem, Dirty Read Problem, Types of Failures, Transaction States, Desirable Properties (ACID properties) of Transactions. Skill Based/ Participative/Experimental Learning – Quiz.	**14**

Text Books:

1. Fundamentals of Database Systems: Ramez Elamassri, Shankant B Navathe, 7th Edition, Pearson, 2015.
2. An Introduction to Database Systems: Bipin Desai, Galgotia Publications, 2010.

References:

1. Introduction to Database System: C J Date, Pearson, 1999.
2. Database Systems Concepts: Abraham Silberschatz, Henry Korth, S Sudarshan, 6th Edition, Tata McGraw Hill, 2010.
3. Database Management Systems: Raghu Rama Krishnan and Johannes Gehrke, 3rd Edition, Tata McGraw Hill, 2002.
4. https://www.javatpoint.com/dbms-tutorial
5. https://www.tutorialspoint.com/dbms/index.htm
6. https://www.geeksforgeeks.org/introduction-of-dbms-database-management-system-set-1/

Activity 1:

Database: Student (DDL, DML Statements)

Table: Student

Name	Reg. No	Class	Major
Santhosh	17	1	CS
Bharath	8	2	CS

Table: Course

Course Name	Course Number	Credit Hours	Department
Fundamentals of Computer Science	CS1310	4	CS
Data Structures	CS3320	4	CS
Discrete Mathematics	MATH2410	3	MATH
Database Management System	CS3380	3	CS

Table: Section

Section Identifier	Course Number	Yea r	Instructor
85	MATH2410	98	Komal
92	CS1310	98	Anita
102	CS3320	99	Kusum
112	MATH2410	99	Chandu
119	CS1310	99	Anita
135	CS3380	99	Smita

Table: Grade_Report

Reg. No	Section_Identifier	Grade
17	112	B
17	119	C
8	85	A
8	92	A
8	102	B
8	135	A

- Create Tables using Create Statement.
- Insert Rows to Individual Tables using Insert Statement.
- Alter Table Section Add New Field Section and Update the Records,
- Delete Bharath's Grade Report.
- Drop the Table Section.

Activity 2: (Select Clause, Arithmetic Operators)

Database: Employee

Create Following **tables** and Insert **tuples** with Suitable Constraints

Table: EMPLOYEE

EMPID	FIRSTANAME	LASTNAME	Hire_Date	ADDRESS	CITY
1001	Guru	Singh	11-May-20	83 K D Road	Mysuru
1002	Mary	Jones	25-Feb-22	842 Vani Villas Road	Lonavla
1012	Samantha	Tata	12-Sep-19	33 Irwin Road	Mysuru
1015	Pavan	Timmaiah	19-Dec-20	11 Railway Road	Mysuru
1016	Sharath	Sharma	22-Aug-21	440 MG Road	New Delhi
1020	Monika	Gupta	07-Jun-22	9 Bandra	Mumbai

Table: EMPSALARY

EMPID	SALARY	BENEFITS	DESIGNATION
1001	10000	3000	Manager
1002	8000	1200	Salesperson
1012	20000	5000	Director
1015	6500	1300	Clerk
1016	6000	1000	Clerk
1020	8000	1200	Salesperson

Write queries for the following

1. To display FIRSTNAME, LASTNAME, ADDRESS and CITY of all employees living in MYSURU.
2. To display the content of employee table in descending order of FIRSTNAME
3. Select FIRSTNAME and SALARY of salesperson
4. To display the FIRSTNAME, LASTNAME and TOTAL SALARY of all employees from the table EMPLOYEE and EMPSALARY. Where TOTAL SALARY is calculated as SALARY+BENEFITS
5. List the Names of employees, who are more than 1 year old in the organization
6. Count number of distinct DESINGATION from EMPSALARY
7. List the employees whose names have exactly 6 characters
8. Add new column PHONE_NO to EMPLOYEE and update the records
9. List employee names, who have joined before 15-Jun-22 and after 16-Jun-21
10. Generate Salary slip with Name, Salary, Benefits, HRA-50%, DA-30%, PF-12%, Calculate gross. Order the result in descending order of the gross.

Activity 3: (Logical, Relational Operators)

Database: Library

Create Following **tables** and insert **tuples** with suitable constraints

Table: Books

Book_ Id	Book_name	Author_Name	Publishers	Price	Type	Qty
C0001	The C Book	S K Srivastava	BPB	355	Reference	5
F0001	The Java Book	Balaguruswamy	TMGH	650	Syllabus	20
T0001	My First C++	Tenzine	BPB	350	Text	10
T0002	C++ Brainwork"s	A W Rossaine	Pearson	350	Text	15
F0002	Python	Ana Roberts	TMGH	750	Syllabus	50

Table: Issued

Book_Id	Quantity_Issued
T0001	4
C0001	5
F0001	2
T0002	5
F0002	8

Write queries for the following

1. To show Book name, Author name and price of books of **TMGH** publisher.
2. Display Book id, Book name and publisher of books having quantity more than 8 and price less than 500.
3. Select Book id, book name, author name of books which is published by other than BPB publishers and price between 300 to 700.
4. Generate a Bill with Book_id, Book_name, Publisher, Price, Quantity, 4% of VAT "Total".
5. Display book details with book id's C0001, F0001, T0002, F0002 (Hint: use IN operator).
6. Display Book list other than, type Reference and Syllabus.
7. Display book details with author name starts with letter 'A'.
8. Display book details with author name starts with letter 'T' and ends with 'E'.
9. Select Book_Id, Book_Name, Author Name, Quantity Issued where Books.Books_Id =Issued.Book_Id.
10. List the book_name, Author_name, Price in ascending order of Book_name and then on descending order of price.

Activity 4: (Date Functions)

Database: Lab

Create Following **table** and insert **tuples** with suitable constraints

Table: Equipment_Details

No.	ItemName	Costperitem	Qty	Dateofpurchase	Warranty	Operational
1	Computer	30000	9	21/5/20	2	7
2	Printer	5000	3	21/5/19	4	2
3	Scanner	8000	1	29/8/21	3	1
4	Camera	7000	2	13/6/18	1	2
5	UPS	15000	5	21/5/21	1	4
6	Hub	8000	1	31/10/21	2	1
7	Plotter	25000	2	11/1/22	2	2

(Use date functions and aggregate functions)

1. To select the ItemName purchase after 31/10/20
2. Extend the warranty of each item by 6 months.
3. Display ItemName, Dateof purchase and number of months between purchase date and present date.
4. To list the ItemName in ascending order of the date of purchase where quantity is more than 3.
5. To count the number, average of costperitem of items purchased before 1/1/21.
6. To display the minimum warranty, maximum warranty period.
7. To Display the day of the date, month , year of purchase in characters.
8. To round of the warranty period to month and year format.
9. To display the next Sunday from the date '07-JUN-96'.
10. To list the ItemName, which are within the warranty period till present date.

Activity 5: (Numeric, Character Functions)

Use Functions for the following

1. Find the mod of 165,16.
2. Find Square Root of 5000.
3. Truncate the value 128.3285 to 2 and -1 decimal places.
4. Round the value 92.7683 to 2 and -1 decimal places.
5. Convert the string 'Department' to uppercase and lowercase.
6. Display your address convert the first character of each word to uppercase and rest are in lowercase.
7. Combine your first name and last name under the title Full name.
8. A) Take a string length maximum of 15 displays your name to the left. The remaining space should be filled with '*'.
9. Take a string length maximum of 20 displays your name to the right. The remaining space should be filled with '#'.
10. Find the length of the string 'SBRR Mahajana FGC, Mysore.
11. Display substring 'BASE' from 'DATABASE'.
12. Display the position of the first occurrence of character 'o' in Position and Length.
13. Replace string Database with Data type.
14. Display the ASCII value of ' ' (Space).
15. Display the Character equivalent of 42.

Activity 6: Database: subject

Create Following **table** and insert **tuples** with suitable constraints

Table - Physics

RegNo	Name	Year	Combination
AJ00325	Ashwin	First	PCM
AJ00225	Swaroop	Second	PMCs
AJ00385	Sarika	Third	PME
AJ00388	Hamsa	First	PMCs

Table – Computer Science

RegNo	Name	Year	Combination
AJ00225	Swaroop	Second	PMCs
AJ00296	Tejas	Second	BCA
AJ00112	Geetha	First	BCA
AJ00388	Hamsa	First	PMCs

1. Select all students from physics and Computer Science.
2. Select student common in physics and Computer Science.
3. Display all student details those are studying in second year.
4. Display student those who are studying both physics and computer science in second year.
5. Display the students studying only physics.
6. Display the students studying only Computer Science.
7. select all student having PMCs combination.
8. select all student having BCA combination.
9. select all student studying in Third year.
10. Rename table Computer Science to CS.

Activity 7: (views)

Database: Railway Reservation System

Create Following **table** and insert **tuples** with suitable constraints

Table: Train Details

Train_No	Train_Name	Start_Place	Destination
RJD16	Rajdhani Express	Bangalore	Mumbai
UDE04	Udhyan Express	Chennai	Hyderabad
KKE55	Karnataka Express	Bangalore	Chennai
CSE3	Shivaji Express	Coimbatore	Bangalore
JNS8	Janashatabdi	Bangalore	Salem

Table: Availability

Train_No	Class	Start_Place	Destination	No_of_Seats
RJD16	Sleeper Class	Bangalore	Mumbai	15
UDE04	First Class	Chennai	Hyderabad	22
KKE55	First Class AC	Bangalore	Chennai	15
CSE3	Second Class	Coimbatore	Bangalore	8
JNS8	Sleeper Class	Bangalore	Salem	18

1. Create view **sleeper** to display train no, start place, destination which have sleeper class and perform the following:
   a. insert new record.
   b. update destination='Manglore' where train no='RJD16'.
   c. delete a record which have train no='KKE55'.
2. Create view **details** to display train no, train name, class.
3. Create view **total_seats** to display train number, start place, use count function to no of seats ,group by start place and perform the following:
   a. insert new record.
   b. update start place='Hubli' where train no='JNS8'.
   c. delete last row of the view.
4. Rename view sleeper to class.
5. Delete view details.

Activity 8: (group by, having clause)

Database: Bank system

Create Following **table** and insert **tuples** with suitable constraints

Table: Account

Account_No	Cust_Name	Brach_ID
AE0012856	Reena	SB002
AE1185698	Akhil	SB001
AE1203996	Daniel	SB004
AE1225889	Roy	SB002
AE8532166	Sowparniika	SB004
AE8552266	Anil	SB003
AE1003996	Sathwik	SB004
AE1100996	Swarna	SB002

Table: Branch

Branch_ID	Branch_Name	Branch_city
SB001	Malleshwaram	Bangalore
SB002	MG Road	Bangalore
SB003	MG Road	Mysore
SB004	Jainagar	Mysore

Table: Depositor

Account_No	Branch_ID	Balance
AE0012856	SB002	12000
AE1203996	SB004	58900
AE8532166	SB003	40000
AE1225889	SB002	150000

Table: Loan

Account_No	Branch_ID	Balance
AE1185698	SB001	102000
AE8552266	SB003	40000
AE1203996	SB004	15000
AE1100996	SB002	100000

1. Display Total Number of accounts present in each branch.
2. Display Total Loan amount in each branch.
3. Display Total deposited amount in each branch by descending order.
4. Display max, min loan amount present in each city.
5. Display average amount deposited in each branch, each city.
6. Display maximum of loan amount in each branch where balance is more than 25000.
7. Display Total Number of accounts present in each city.
8. Display all customer details in ascending order of Branch_ID.
9. Update Balance to 26000 where Account_No =AE1003996.
10. Display Customer Names with their branch Name.

Course Articulation Matrix - 222449

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	1	1	1	1	1	1	1	1	2
CO 2	2	2	2	-	3	1	-	1	1	1	-	2
CO 3	2	2	1	-	1	1	-	-	2	1	-	2
CO 4	2	2	2	-	1	1	-	1	1	1	-	2
Weighted Average	**2.25**	**2.25**	**1.75**	**1**	**1.5**	**1**	**1**	**1**	**1.25**	**1**	**1**	**2**

OE(4) Computer Science Syllabus for All Programs (Except Science)

Semester IV

Course Code: 22OECMS401	**Course Title: OE(4)** - Fundamentals of Multimedia
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Acquire knowledge on multimedia and related terminologies.
CO 2: Acquaint with various input output technologies used and technological issues faced in multimedia.
CO 3: Interpret and apply the concept of security systems in multimedia.

Course Content

UNIT - 1	**INTRODUCTION TO MULTIMEDIA**	**14 HOURS**
Concepts of Multimedia, Multimedia applications, Advantage of Digital Multimedia, Multimedia system Architecture, Objects of Multimedia. Introduction to Compression and Decompression Techniques and its types. File format standards- RTF, TIFF,RIFF, MIDI, JPEG, AVI, TWAIN Architecture.		
UNIT - 2	**MULTIMEDIA I/O TECHNOLOGIES**	**14 HOURS**
Key Technology Issues, Pen Input, Video and Image Display Systems, Print Output Technologies, Image Scanners, Digital Voice and Audio, Video Images and Animation, Full Motion Video.		
UNIT - 3	**SECURED MULTIMEDIA AND AUTHENTICATION**	**14 HOURS**
Secured Multimedia, Digital Rights Management Systems, and Technical Trends - Multimediaencryption - Digital Watermarking – Security Attacks. Multimedia Authentication - Pattern, Speaker and Behavior Recognition – Speaker Recognition - Face Recognition.		

Text Books:

1. A Textbook of Multimedia: Vishnu Priya Singh, 2nd Revised Edition, Asian Computech Book.
2. Introduction to Multimedia: Prof. Satish Jain, Shashi Singh and M Geetha, BPB Publications.

References:

1. Multimedia Security - Steganography and Digital Watermarking techniques forProtection of Intellectual Property: Chun-Shien Lu, Springer Inc, 2007.
2. Multimedia Systems: Andleigh P K and Thakrar K, Addison Wesley Longman, 1999.
3. Multimedia Communications: Fred Halsall, Addison Wesley, 2000.
4. https://www.tutorialspoint.com/multimedia/index.htm
5. https://www.youtube.com/watch?v=Syeu_l3sAJE
6. https://www.techtarget.com/searchsecurity/definition/authentication

Course Articulation Matrix – 22OECMS401

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	1	-	1	1	1	1	1	1	-	2
CO 2	1	1	1	-	1	-	-	-	1	1	-	2
CO 3	1	2	1	-	1	1	1	3	1	1	1	2
Weighted Average	**1.33**	**1.33**	**1**	**-**	**1**	**1**	**1**	**2**	**1**	**1**	**1**	**2**

Continuous Formative Evaluation/Internal Assessment (DSC & OE)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the principal. The principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

  Part-A Program(C1): 10 marks

  Part-B Program(C2): 10 marks + Record: 05 marks = 15 marks

- The student is evaluated for 25 marks in C3 as per the following scheme:

Assessment Criteria		Marks
Program - 1 from Part A	Writing the Program	10
Program - 2 from Part B		
Execution and Formatting (Any one program: Decided by the External Examiner)		10
Viva Voce		05
TOTAL		**25**

DSC Computer Science Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** $2\frac{1}{2}$ Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part - A and Part – B.
- Part – A: Should consist of 12 Questions (3 Questions from each Unit).
- Part – B: Should consist of 4 Main Questions (1 from Each Unit) with 2 Sub Questions where internal split is permitted.

PART – A

Answer any EIGHT Questions. Each Question carries 2 Marks. 8Q X 2M = 16 Marks

1. a.
   b
   c.
   .
   .
   k.
   l.

PART – B

Answer ALL the Questions. Each Main carries 11 Marks. 4Q X 11M = 44 Marks

2. a.
   b.

   OR

   c.
   d.

3. a.
   b.

   OR

   c.
   d.

4. a.
   b.

   OR

   c.
   d.

5. a.
   b.

   OR

   c.
   d.

OE Computer Science Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** $2\frac{1}{2}$ Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part – A and Part – B.
- Part – A: Should consist of 12 Sub Questions (4 Questions from each Unit).
- Part – B: Should consist of 3 Main Questions (1 from Each Unit) with 2 Sub Questions where internal split is permitted.

PART – A

Answer any NINE Questions. Each Question carries 2 Marks. 9Q X 2M = 18 Marks

1. a.
   b
   c.
   .
   .
   k.
   l.

PART – B

Answer ALL the Questions. Each Main Carries 14 Marks. 3Q X 14M = 42 Marks

2. a.
   b.

   OR

   c.
   d.

3. a.
   b.

   OR

   c.
   d.

4. a.
   b.

   OR

   c.
   d.

SKILL ENHANCEMENT COURSE (SEC) for All Programs

NOTE: This Course will be handled by the Department of Computer Science for BBA, BCom., BSc. (All Combinations) and BA (All Combinations).

Course Code: 22AINS94	**Course Title: SEC(2)** - Artificial Intelligence
Course Credits (L:T:P): 02 (1:0:1)	**Hours of Teaching/Week:** 1 Hour (Theory) 2 Hours (Practical)
Total Contact Hours: 14 Hours (Theory) 28 Hours (Practical)	**Formative Assessment Marks: 25**
Exam Duration: 1 Hour (Theory)	**Semester End Examination Marks:** 25

Course Outcomes (COs):

CO 1: Acquire knowledge on artificial intelligence (AI) and intelligent systems.
CO 2: Analyze real time applications of AI.

Course Content

UNIT - 1	
Overview of AI: Definition of Artificial Intelligence, Philosophy of AI, Goals of AI, Elements of AI system, Programming a computer without and with AI, AI Techniques, History of AI. **Intelligent Systems:** Definition and understanding of Intelligence, Types of Intelligence, Human Intelligence vs Machine Intelligence.	**07 Hours**
UNIT – 2	
AI Applications: Virtual assistance, Travel and Navigation, Education and Healthcare, optical character recognition, E-commerce and mobile payment systems, Image based search and photo editing. **AI Examples in Daily Life:** Installation of AI apps and instructions to use AI apps. Introduction to Robotics.	**07 Hours**

Text Books:

1. Introduction to Artificial Intelligence: Wolfgang Ertel, 2nd Edition, Springer International Publishing, 2017.
2. Artificial Intelligence - A Guide to Intelligent Systems: Michael Negnevitsky, 2nd Edition, Pearson Education Limited, 2005.

References:

1. https://www.tutorialspoint.com/artificial_intelligence/artificial_intelligence_tutorial.pdf
2. Artificial Intelligence: Kevin Knight, Elaine Rich, Shivashankar B Nair, 3rd Edition, July 2017.

Laboratory

Amazon Alexa:
https://play.google.com/store/apps/details?id=com.amazon.dee.app&hl=en&gl=US
Google Lens:
https://play.google.com/store/search?q=google+lens&c=apps&hl=en&gl=US
Image to Text to Speech ML OCR:
https://play.google.com/store/apps/details?id=com.mlscanner.image.text.speech& hl=en_IN&gl=US
Google Pay:
https://play.google.com/store/apps/details?id=com.google.android.apps.nbu.paisa.user&hl=en_IN&gl=US
Grammarly:
https://play.google.com/store/search?q=grammarly&c=apps&hl=en_IN&gl=
Google Map:
https://play.google.com/store/search?q=google+maps&c=apps&hl=en&gl=US
Face App:
https://play.google.com/store/apps/details?id=io.faceapp&hl=en_IN&gl=US
Socratic:
https://play.google.com/store/apps/details?id=com.google.socratic&hl=en_IN&gl=US
Google Fit: Activity Tracking:
https://play.google.com/store/apps/details?id=com.google.android.apps.fitness&h l=en_IN&gl=US
SwiftKey Keyboard:
https://swiftkey-keyboard.en.uptodown.com/android
E-commerce App:
https://play.google.com/store/apps/details?id=com.jpl.jiomart&hl=en_IN&gl=US

Reference Links:

1. **Voice Assistant:**
   https://alan.app/blog/voiceassistant-2/
2. **Browse with Image:**
   https://www.pocket-lint.com/apps/news/google/141075-what-is-google-lens-and-how-does-it-work-and-which-devices-have-it
3. **OCR:**
   https://aws.amazon.com/what-is/ocr/
4. **Mobile Payment System:**
   https://gocardless.com/en-us/guides/posts/how-do-mobile-payment-systems-work/
5. **Grammarly:**
   https://techjury.net/blog/how-to-use-grammarly/#gref
6. **Travel & Navigation:**
   https://blog.google/products/maps/google-maps-101-ai-power-new-features-io-2021/
7. **AI in Photo Editing:**
   https://digital-photography-school.com/artificial-intelligence-changed-photo-editing/
8. **AI in Education:**
   https://www.makeuseof.com/what-is-google-socratic-how-does-it-work/
9. **AI in Health and Fitness:**
   https://cubettech.com/resources/blog/implementing-machine-learning-and-ai-in-health-and-fitness/
10. **E-Commerce and Online Shopping:**
    https://medium.com/@nyxonedigital/importance2-of-e-commerce-and-online-shopping-and-why-to-sell-online-5a3fd8e6f416

Course Articulation Matrix – 22AINS94

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	1	-	-	1	2	1	1	-	-	1	2
CO 2	2	1	1	-	3	2	2	1	1	2	1	2
Weighted Average	**1.5**	**1**	**1**	**-**	**2**	**2**	**1.5**	**1**	**1**	**2**	**1**	**2**

Continuous Formative Evaluation/Internal Assessment (SEC)

Total marks for SEC shall be based on continuous assessments and semester end examinations. The pattern is 50:50 for IA and Semester End Theory Examinations respectively.

	THEORY
Total Marks	50 Marks
Continuous Assessment – 1 (C1)	10 Marks
Continuous Assessment – 2 (C2)	15 Marks
Semester End Examination (C3)	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 30% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 50%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the principal. The principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	10	-	10
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	15	15
Total	10	15	25

- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

SEC Computer Science Theory Question Paper Pattern (All Programs)

Max. Marks: 25 Marks **Exam Duration:** 1 Hour

Instructions: Paper Setting

- The Question Paper consists of 3 Main Questions.
- Question 1: Should consist of 5 Questions (Multiple Choice Questions).
- Question 2: Should consist of 2 Questions (1 from Each Unit) where internal split and internal choice is permitted.
- Question 3: Should consist of 2 Questions (1 from Each Unit) where internal split is permitted.

1. Answer all FIVE Questions. Each Question carries 1 Mark. 5Q X 1M = 5 Marks

a.
b.
c.
d.
e.

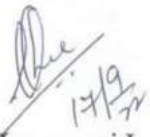
2. Answer the TWO Questions. Each Question carries 5 Marks. 2Q X 5M = 10 Marks

a.
b.

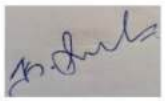
3. Answer any ONE Question. Question carries 10 Marks. 1Q X 10M = 10 Marks

a.
b.

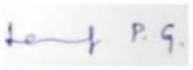
APPROVED BY THE FOLLOWING BoS MEMBERS



(1) Smt. Hamsaveni L



(2) Dr. Suresh K

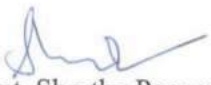


(3) Dr. Lavanya P G

(4) Smt. Rachana C R

(5) Sri. Santhosh Kumar

(6) Sri. Mahendra J M



(7) Smt. Shruthy Poonacha

(8) Smt. Radhika Rani

DEPARTMENT OF COMPUTER SCIENCE

Motto

Technology for Transformation

Vision

Information Technology for Better Future

Mission

Imparting Quality and Ethical Based Education all the way through Technology

Equipping the students for a Demanding Career

Empowering the students with Professional Touch to become Successful Entrepreneurs

Program Outcomes (POs) for Bachelor of Science

PO1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO2: Problem Analysis – Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO3: Design and Development of Solutions – Developing solutions and inferences for complex problems using critical and analytical thinking.

PO4: Investigation & Research – Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO5: Use of Modern Techniques/Tools – Use digital resources, various software/ platforms and appropriate techniques to interpret concepts of science.

PO6: Impact of Science on Society – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO10: Communication – Develop the caliber to convey various concepts of science effectively.

PO11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO12: Life-long Learning – Engage in the art of self-directed learning.

Objectives: Computer Science

1. To provide foundation of computing principles for using information systems & enterprise software effectively.
2. Help students in analyzing the requirements for system programming, learn modern methods of information processing and its applications.
3. Provide students with an option to specialize in various domains of computers.
4. To produce outstanding computer scientists, who can apply the theoretical knowledge in solving real-time problems and in developing standalone live projects.
5. To build entrepreneurs by developing among students the programming techniques, software developing skills and problem-solving skills.
6. To prepare students who wish to pursue further studies and career in computer science and related subjects.

List of BoS Members

Sl. No.	Category	Name & Designation	Address for Communication	e-Mail & Mobile No.
1	Chairperson	Smt. Shruthy Poonacha Assistant Professor & HoD	Department of Computer Science SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	shruthypoonacha.fgc@mahajana.edu.in 9886367273
2	Member	Smt. Radhika Rani Assistant Professor	Department of Computer Science SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	radhikarani.fgc@mahajana.edu.in 9538737927
3		Smt. Rachana C R Associate Professor	Department of Computer Science SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	rachanacr@gmail.com 8095645644
4	Nominee by the Vice Chancellor	Smt. Hamsaveni L Assosiate Professor	DoS in Computer Science Manasagangotri, University of Mysore, Mysuru – 570006	hamsa1367@gmail.com 9448665767
5	Two Experts from Other University	Dr. Suresh K Assistant Professor	Department of Computer Science Christ University, Hosur Road, Bengaluru - 560029	suresh.kalaimani@gmail.com 9003310571
6		Dr. Lavanya P G Assistant Professor	Department of Computer Science Government Boy's College (A), Mandya – 571401	lavanyapggcm@gmail.com 9448006546
			Note: Dr. Lavanya P G was transferred to Maharani's Science College, Mysuru in the year 2023.	

7	One Person from Industry/ Corporate Sector/Allied Area	Sri. Santhosh Kumar Lead Software Engineer	Fidelity Investments Manyatha Tech Park, Hebbal Outer Ring Road, Nagwara, Bengaluru - 560045	santhoshkavempu@gmail.com 9986979735
8	Alumnus	Sri. Mahendra J M Senior Associate	Morgan Stanley Advantage Services Oberoi Commerz II, Mohan Gokhale Road, We Work, Oberoi Garden City, Goregoan (East), Mumbai - 400063	jmmahendra.08@gmail.com 9066849377

Course Structure (NEP)

Discipline Specific Courses (DSC) and Skill Enhancement Course (SEC)

III Year

Course Type, Code and Title		Hours/ Week		L:T:P (Credits)	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P		C1	C2	C3		
Computer Science – V Sem									
232549	**DSC(5) -** Programming in Python	**4**	**0**	**4:0:2 (6 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hrs**	**150**
	DSC(5) Lab - Python Programming Lab	**0**	**4**		**10**	**15**	**25**	**3 Hrs**	
232550	**DSC(6) -** Computer Networks	**4**	**0**	**4:0:2 (6 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hrs**	**150**
	DSC(6) Lab - Computer Networks Lab	**0**	**4**		**10**	**15**	**25**	**3 Hrs**	
SEC(3)	Cyber Security **23CYST94**	**3**	**0**	**3:0:0 (3 Credits)**	**20**	**30**	**50**	**2 Hrs**	**100**
	OR								
	Employability Skills **23EMPCMS01**	**3**	**0**	**3:0:0 (3 Credits)**	**20**	**30**	**50**	**2 Hrs**	**100**
Computer Science – VI Sem									
232649	**DSC(7) -** Web Technologies	**4**	**0**	**4:0:2 (6 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hrs**	**150**
	DSC(7) Lab - Web Technologies Lab (JavaScript, HTML, CSS Lab)	**0**	**4**		**10**	**15**	**25**	**3 Hrs**	
232650	**DSC(8) -** Statistical Computing & R Programming	**4**	**0**	**4:0:2 (6 Credits)**	**20**	**20**	**60**	**$2\frac{1}{2}$ Hrs**	**150**
	DSC(8) Lab - R Programming Lab	**0**	**4**		**10**	**15**	**25**	**3 Hrs**	
SEC(4)	Logical Reasoning **23LORCMS01**	**2**	**0**	**2:0:0 (2 Credits)**	**20**	**30**	**50**	**2 Hrs**	**100**
	OR								
	Internship **23INTCMS01**	**(2 Credits) (90 Hours)**			**50**	**50**	**-**	**-**	**100**

DSC(5) Syllabus for B.Sc. Computer Science

Semester V

Course Code: 232549	**Course Title:** **DSC(5) -** Programming in Python (Theory) **DSC(5) Lab -** Python Programming Lab (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Procure Knowledge on Basic Python Programming Concepts and Control Flow.

CO2: Design Solutions for Real-time Applications using the concept of Basic & Advanced Data Types in Python.

CO3: Develop Efficient Python Applications using Functions, OOP Concepts, File & Exception Handling.

CO4: Apply Knowledge Gained on Various Python Libraries for GUI, Data Analysis and Data Visualization.

Course Content

Content	Hours
UNIT – 1	
Introduction to Features and Applications of Python: Python Versions; Installation of Python; Python Command Line Mode and Python IDEs. **Python Basics:** Identifiers; Keywords; Data Types; Statements and Expressions; Variables; Python Operators; Precedence and Association; Indentation; Comments; Built-in Functions - Console Input and Console Output; Format Specifiers; Escape Sequences; Type Conversions; Python Libraries; Importing Libraries with Examples; Simple Python Program. **Python Control Flow:** Types of Control Flow; Control Flow Statements - if, if-else, elif, while Loop, break, continue, for Loop Statements; range() and exit() Functions. Skill Based/ Participative/Experiential Learning – Individual Programming Assignment.	**15**
UNIT – 2	
Strings: Creating and Storing Strings; str() Function; Accessing String Characters; Operations - Concatenation, Comparison, Slicing and Joining, Traversing; Python String Methods. **Python Sets:** Lists - Creating Lists, Operations, Built-in Functions, Nested Lists; Dictionaries - Creating Dictionaries, Operations, Dictionary Methods; Tuples – Creating, Operations, Built-in Methods. Skill Based/ Participative/Experiential Learning – Quiz.	**14**
UNIT – 3	
Python Functions: Definition; Types; Syntax – Defining and Calling Function; Parameters/Arguments – Types, Passing; return Statement; Recursive Functions; Scope and Lifetime of Variables in Functions. **Exception Handling:** Definition – Error, Exception; Types of Errors; Exception Handling using try, except and finally. **File Handling:** File Types; Operations on Files– Create, Open, Read, Write, Close Files; File Names and Paths; Format Operator. **Object Oriented Programming:** Classes - Creating; Objects - Creating, as Arguments, as Return Values; OOPs Concepts – Definition & Examples of Inheritance & Polymorphism.	**13**

Skill Based/ Participative/Experiential Learning – Group Assignment.	
UNIT – 4	
GU Interface: Tkinter Module; Window and Widgets; Layout Management - pack, grid and place. **Python SQLite:** SQLite3 Module; SQLite Methods - connect, cursor, execute, close; Connect to Database; Create Table; Operations on Tables- Insert, Select, Update, Delete and Drop Records. **Data Analysis:** NumPy – Introduction; Array Creation using NumPy; Operations on Arrays; Pandas – Introduction; Series and DataFrames; Creating DataFrames from Excel Sheet and .csv File; Operations on DataFrames. **Data Visualization:** Introduction; Matplotlib Library; Different Types of Charts using Pyplot – Line Chart, Bar Chart, Pie Chart and Histogram. Skill Based/ Participative/Experiential Learning – Design a Simple Application using these Concepts.	**14**

Text Books:

1. Introduction to Python Programming: Gowrishankar S et al., 2019, CRC Press.
2. Fluent Python – Clear, Concise and Effective Programming: Luciano Ramalho, 2015, O'Reilly Publications.
3. Building Modern GUIs with tkinter and Python – Building User-Friendly GUI Applications with Ease: Saurabh Chandrakar and Dr. Nilesh B B, BPB Publications.
4. Data Visualization with Python: Mario Döbler, Tim Größmann, 2019, Packt Publishing.

References:

1. Think Python - How to Think Like a Computer Scientist: Allen Downey et al., 2nd Edition, 2015, Green Tea Press. (Free Online Link: https://www.greenteapress.com/thinkpython/thinkCSpy.pdf)
2. Advance Core Python Programming: Meenu Kohli, 2021, BPB Publications.
3. Core Python Applications Programming: Wesley J Chun, 3rd Edition, 2012, Prentice Hall Publication.
4. Automate the Boring Stuff: Al Sweigart, 2015, No Starch Press Inc..
5. Data Structures and Program Design using Python: D Malhotra et al., 2021, Mercury Learning and Information LLC.
6. http://www.ibiblio.org/g2swap/byteofpython/read/
7. https://docs.python.org/3/tutorial/index.html
8. https://www.w3schools.com/python/
9. https://www.geeksforgeeks.org/python-programming-language/

PRACTICAL COMPONENT

PART A: FUNDAMENTALS OF PYTHON

Write a Python Program to:

1. Implement User I/O Operation.
2. Demonstrate All Arithmetic Operators.
3. Demonstrate various if statements.
4. Demonstrate while loop.
5. Demonstrate for loop with and without range.
6. Demonstrate Identity & Membership Operators.
7. Implement at least 12 Built-in String Methods.
8. Demonstrate the Use of Lists using Built-in Methods.
9. Demonstrate the Use of Dictionaries using Built-in Methods.
10. Demonstrate the Use of Tuples using Built-in Methods.

PART B: ADVANCED PYTHON PROGRAMMING

Write a Python Program to:

1. Demonstrate a User-Defined Function.
2. Demonstrate Exception Handling.
3. Read & Write on to a File.
4. Demonstrate Object Oriented Programming Concepts.
5. Create a GUI using Tkinter Module.
6. Create SQLite Database and Perform Operations on Tables.
7. Create an Array using NumPy and Perform Array Operations.
8. Create DataFrame from a Spreadsheet using Pandas and Perform DataFrame Operations.
9. Create a Line and Bar Graph using Matplotlib.
10. Create a Pie Chart and Plot a Histogram using Matplotlib.

Note: Student has to execute all programs in each part to complete the Lab course.

Course Articulation Matrix - 232549

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	1	2	-	-	1	1	1	-	1
CO2	1	2	2	1	2	-	-	-	-	-	-	3
CO3	1	2	2	-	2	-	-	-	-	-	1	3
CO4	1	2	1	-	3	1	1	1	1	2	1	3
Wtd. Avg.	**1.25**	**2.25**	**2**	**1**	**2.25**	**1**	**1**	**1**	**1**	**1.5**	**1**	**2.5**

DSC(6) Syllabus for B.Sc. Computer Science

Semester V

Course Code: 232550	**Course Title:** **DSC(6) -** Computer Networks (Theory) **DSC(6) Lab** - Computer Networks Lab (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Build an Understanding of the Fundamental Concepts of Computer Networking, Identify various Network Topologies and Enumerate the Layers of the OSI Reference Model and TCP/IP.

CO2: Familiarize with the use of Physical Layer of a Network Model and Transmission Media & related Terminologies.

CO3: Apply Knowledge Gained on Framing, Error Detection & Correction Techniques, Channelization, Access Mechanism, Data Link Control & Protocol and Wired & Wireless LAN.

CO4: Identify & Interpret the functions of a Transport & Application Layer & Protocols.

Course Content

Content	Hours
UNIT – 1	
Introduction to Computer Networks: Definition; Goals; Structure; Broadcast and Point-To-Point Networks; Network Topology and its various Types; Types of Network; Network software; Design Issues for the Layers; Connection-oriented vs. Connectionless service; Applications of Computer Network; Protocols and Standards; The OSI Reference Model; The TCP/IP Protocol Suite; Comparison between OSI and TCP/IP Reference Model. Skill Based/ Participative/Experiential Learning – Assignment.	**12**
UNIT – 2	
Physical Layer: Functions of Physical Layer; Analog and Digital Signals; Transmission Impairment; Data Rate Limits and Performance; Data Transmission Media - Guided Transmission Media, Magnetic Media, Twisted Pairs, Coaxial Cable, Power Lines, Fiber Optics, Wireless Transmission, Electromagnetic Spectrum, Radio Transmission, Microwave Transmission, Infrared Transmission, Light Transmission; Digital Modulation and Multiplexing; Public Switched Telephone Networks; Switching - Circuit Switching, Message Switching and Packet Switching. Skill Based/ Participative/Experiential Learning – Seminar/Quiz.	**15**
UNIT – 3	
Data Link Layer: Functions of Data Link Layer; Data Link Control - Framing, Flow and Error Control, Error Detection and Correction, High-Level Data Link Control (HDLC) & Point to Point Protocol (PPP); Channel Allocation Problem; Multiple Access - Radom Access (ALOHA, CSMA, CSMA/CD, CSMA/CA), Controlled Access (Reservation, Polling, Token Passing), Channelization (FDMA, TDMA, CDMA). **Wired & Wireless LAN:** Wired LAN - Ethernet Standards and FDDI; Wireless LAN - IEEE 802.1 Ix and Bluetooth Standards. Skill Based/ Participative/Experiential Learning – Seminar/Quiz.	**15**

UNIT – 4	
Transport Layer: Functions of Transport Layer; Elements of Transport Protocols - Addressing, Establishing and Releasing Connection; Flow Control & Buffering; Error Control; Multiplexing & De-multiplexing; Crash Recovery. **User Datagram Protocol (UDP):** User Datagram; UDP Operations; Uses of UDP and RPC; Principles of Reliable Data Transfer - Building a Reliable Data Transfer Protocol, Pipelined Reliable Data Transfer Protocol, Go Back-N (GBN), Selective Repeat (SR). **Application Layer:** Functions of Application Layer; Application Layer Protocols - DNS, DHCP, WWW, HTTP, HTTPs, TELNET, FTP, SMTP, POP, IMAP. Skill Based/ Participative/Experiential Learning – Group Assignment.	**14**

Text Books:

1. Computer Networks: Andrew S Tanenbaum, David J Wetherall, 5th Edition, Pearson Education.
2. Data Communication and Networking: Behrouz A Forouzan, 4th Edition, Tata McGraw Hill Publication.

References:

1. Computer Networking – A Top-Down Approach: Kuros and Ross, 5th Edition, Pearson Education.
2. Computer Networks – A Systems Approach: Larry L Peterson, Bruce S Davie, 5th Edition, Morgan Kaufmann Publisher, 2011.
3. Data and Computer Communications: William Stallings, 7th Edition, PHI Publications.
4. Data Communication and Computer Networks: Brijendra Singh, PHI Publication.
5. http://highered.mheducation.com/sites/0072967757/index.html

PRACTICAL COMPONENT

PART A

1. Prepare Hardware and Software Specification for Basic Computer System and Networking.
2. Study of Different Types of Network Cables and Practically Implement the Cross-Wired Cable and Straight Through Cable using Clamping Tool.
3. Identifying the Networking Devices on a Network.
4. Configure the IP Address of the Computer.
5. Create a Basic Network and Share File and Folders.
6. Study of Basic Network Command and Network Configuration Commands.
7. Installation Process of any Open-Source Network Simulation Software.

PART B

1. Implement Connecting Two Nodes Using Network Simulator.
2. Implement A Network to Connect Three Nodes considering one Node as a Central Node using Network Simulator.
3. Implement Bus Topology using Network Simulator.
4. Implement Star Topology using Network Simulator.
5. Implement Ring Topology using Network Simulator.
6. Demonstrate the use of Wireless LAN using Network Simulator.
7. Implement FTP (using TCP Bulk Transfer) using Network Simulator.
8. Implement Connecting Multiple Routers & Nodes and Build a Hybrid Topology Network Simulator.
   Links for Open-Source Simulation Software:
   NS3 Software - https://www.nsnam.org/releases/ns-3-30/download/
   Packet Tracer Software - https://www.netacad.com/courses/packet-tracer
   GNS3 Software - https://www.gns3.com/

Note: Student has to execute a minimum of 6 programs in each part to complete the Lab course.

Course Articulation Matrix - 232550

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	2	1	1	1	1	1	1	2
CO2	3	2	2	-	1	-	-	-	-	1	-	2
CO3	3	2	2	-	1	-	-	-	-	1	-	2
CO4	2	2	2	-	2	1	-	1	1	1	1	2
Wtd. Avg.	**2.5**	**2**	**2**	**1**	**1.5**	**1**	**1**	**1**	**1**	**1**	**1**	**2**

SKILL ENHANCEMENT COURSE (SEC)

Course Code: 23CYST94	**Course Title: SEC(3)** – Cyber Security
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks: 5**0
Exam Duration: 2 Hours	**Semester End Examination Marks:** 50

Course Outcomes (COs):
CO1: Gain Knowledge on Basics of Cyber Security and its Challenges.
CO2: Comprehend the Knowledge gained on Cyber Crimes & Cyber Laws in India.
CO3: Analyze and apply knowledge gained on Cyber Security & Laws on Social Media Platforms.

Course Content

MODULE – 1: Introduction to Cyber Security	
Defining Cyberspace and Overview of Computer and Web-technology; Architecture of Cyberspace; Communication and Web Technology; Internet; World Wide Web; Advent of Internet; Internet Infrastructure for Data Transfer and Governance; Internet Society; Regulation of Cyberspace; Concept of Cyber Security; Issues and Challenges of Cyber Security.	**14 Hours**
MODULE – 2: Cyber Crime & Cyber Law	
Classification of Cyber Crimes; Common Cyber Crimes - Cyber Crime targeting Computers and Mobiles, Cyber Crime against Women and Children, Financial Frauds, Social Engineering Attacks, Malware and Ransomware Attacks, Zero Day and Zero Click Attacks; Cyber Criminal's Modus-Operandi; Reporting of Cyber Crimes; Remedial and Mitigation Measures; Legal Perspective of Cyber Crime; IT Act 2000 and its Amendments; Cyber Crime and Offences; Organizations dealing with Cyber Crime and Cyber Security in India.	**14 Hours**
MODULE – 3: Social Media Overview & Security	
Introduction to Social Networks; Types of Social Media; Social Media Platforms; Social Media Monitoring; Hashtag; Viral Content; Social Media Marketing; Social Media Privacy; Challenges; Opportunities and Pitfalls in Online Social Network; Security Issues Related to Social Media; Flagging and Reporting of Inappropriate Content; Laws Regarding Posting of Inappropriate Content; Best Practices for the use of Social Media.	**14 Hours**

Text Book:

1. Cyber Crime Impact in the New Millenium: R C Mishra, 2010 Edition, Auther Press.
2. Cyber Security - Understanding Cyber Crimes, Computer Forensics and Legal Perspectives: Sumit Belapure and Nina Godbole, 1st Edition, Wiley India Pvt. Ltd., 2011.

Reference:

1. Security in the Digital Age – Social Media Security Threats and Vulnerabilities: Henry A Oliver, Pearson, 2001.
2. Cyber Laws – Intellectual Property & e-Commerce Security: Kumar K, Dominant Publishers.
3. Network Security Bible: Eric Cole et al., 2nd Edition, Wiley India Pvt. Ltd..
4. https://sist.sathyabama.ac.in/sist_coursematerial/uploads/SITA1602.pdf
5. https://mrcet.com/downloads/digital_notes/CSE/III%20Year/CYBER%20SECURITY%20(R20A6202).pdf

NOTE: This Course will be handled by the Department of Computer Science for all Programs offering this Course.

Course Articulation Matrix - 23CYST94

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	-	1	1	-	1	1	1	-	2
CO2	1	2	2	1	1	2	1	2	2	1	1	2
CO3	2	2	2	1	2	3	1	3	2	2	1	2
Wtd. Avg.	**1.67**	**1.67**	**1.67**	**1**	**1.33**	**2**	**1**	**2**	**1.67**	**1.33**	**1**	**2**

SKILL ENHANCEMENT COURSE (SEC)

Course Code: 23EMPCMS01	**Course Title: SEC(3)** – Employability Skills
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks: 5**0
Exam Duration: 2 Hours	**Semester End Examination Marks:** 50

Course Outcomes (COs):

CO1: Acquire & Interpret Communication and Behavioral Skills required for Employability.

CO2: Procure Critical Skills and IT Literacy required to increase Productivity & Efficiency at Workplace.

CO3: Accomplish Skills required to become an Entrepreneur, get Insight on Occupational Health, Safety, Law & Environmental Education.

Course Content

MODULE – 1: Basic Skill Set for Employability	
Communication Skills: Introduction; Elements of Communication; Perpectives in Communication; Types of Communication; Effective Communication; Basic English Literacy – Functional English, Reading, Writing. **Behavioral Skills:** Personal Strength Analysis – Self Awareness, Articulating Personal Values, Confidence Building; Ethics, Values & Etiquette – Social Relationships & Networks, Acceptance of Peers from different Cultures & Socio-Economic Backgrounds, Collaboration with Team, Characteristics of a Responsible Citizen, Display Professionalism at Work Place.	**13 Hours**
MODULE – 2: Critical Skill Set for Employability	
Critical Skills: Interview Skills; Time Management & Planning Skills; Maintaining Efficiency at Workplace; Quality Management; Customer Relationship & Interactions; Handling Setbacks or Rejections and Recover from it with an Action Plan; Value-Based Decisions; Dilemma Situations; Sources & Types of Stress; Stress Management; Grievances & its Management. **IT Literacy:** Basics of Computers – Operating System, Web Browsers, Search Engines, Applications of Computer, e-Mailing Options; Office Software and its Uses; Working with ChatGPT to increase Productivity; e-Commerce; e-Payment; QR/AR Code Generation and Use.	**16 Hours**
MODULE – 3: Entrepreneurship and Occupational Health, Safety, Law & Environmental Education	
Entrepreneur Skills: Introduction, Need, Ways to become a Good Entrepreneur, Enabling Environment to become a Good Entrepreneur, Various Govt. Institutions/Schemes promoting Entrepreneurship, Ways to set-up an Enterprise and various aspects involved, Enterprise Maintainance, Learnings from Successful & Unsuccessful Entrepreneur examples. **Occupational Health, Safety, Law & Environmental Education:** Occupational Safety, Health & Hygiene; Occupational Hazards – Types & Prevention Method; Environmental Issues & Ethics; Disaster Management; Labor Welfare Legislation, SDGs and its Importance.	**13 Hours**

Reference:

1. English Skills for Technical Students: British Council, Orient Black Swan, 2011.
2. Surrounded by Idiots: Thomas Erickson, The Runaway International Bestseller, 2019.
3. A course in Grammar and Composition: Geetha Nagaraj, Cambridge University Press India Pvt. Ltd..
4. Communication Skills for Professionals: Nira Konar, 3rd Edition, PHI learning Pvt. Ltd..
5. Computer Literacy Basics: Connie Morrison et al., Pearson Publication, 2014.
6. https://ncert.nic.in/vocational/pdf/kees101.pdf
7. https://egyankosh.ac.in/bitstream/123456789/48007/1/Unit-1.pdf
8. https://www.w3schools.com/gen_ai/chatgpt-3-5/index.php
9. https://www.youtube.com/watch?v=5eTKElZLM9Q
10. https://ncert.nic.in/vocational/pdf/kees104.pdf
11. https://www.oecd.org/cfe/leed/Cooney_entrepreneurship_skills_HGF.pdf
12. https://www.researchgate.net/publication/322942645_Developing_Entrepreneurial_Skills_An_Educational_and_Intercultural_Perspective
13. https://www.ilo.org/global/topics/safety-and-health-at-work/areasofwork/occupational-health/lang--en/index.htm
14. https://dgfasli.gov.in/sites/default/files/service_file/Nat-OSH-India-Draft%281%29.pdf
15. https://www.tnteu.ac.in/pdf/environmental.pdf
16. https://www.bdu.ac.in/cde/docs/ebooks/B-Ed/II/ENVIRONMENTAL%20EDUCATION.pdf
17. https://en.wikipedia.org/wiki/Indian_labour_law#:~:text=The%20Minimum%20Wages%20Act%201948,100%25%20of%20the%20total%20wage.
18. https://bharatskills.gov.in/pdf/E_Books/Labor_welfare_legislation.pdf
19. https://sdgs.un.org/goals
20. https://india.un.org/en/sdgs

Course Articulation Matrix – 23INTCMS01

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	-	2	3	3	2	2	3	-	3
CO2	2	2	2	-	3	3	3	2	3	1	3	3
CO3	1	2	2	1	1	3	3	3	3	1	3	3
Wtd. Avg.	**1.33**	**2**	**2**	**1**	**2**	**3**	**3**	**2.33**	**2.67**	**1.67**	**3**	**3**

DSC(7) Syllabus for B.Sc. Computer Science

Semester VI

Course Code: 232649	**Course Title:** **DSC(7) -** Web Technologies (Theory) **DSC(7) Lab -** Web Technologies Lab (JavaScript, HTML, CSS Lab) (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Acquire knowledge on Internet, WWW & Web Design.
CO2: Design & Develop Applications using HTML, CSS & JavaScript.
CO3: Implement Servlets & Database Connectivity in Web Application Development.
CO4: Optimize Web Application Development with the Knowledge Gained on Web Security.

Course Content

Content	Hours
UNIT – 1	
Introduction and Web Design: Introduction to Internet; WWW and Web 2.0; Web Browsers; Web Protocols and Web Servers; Web Design Principles and Web Site Structure; Client-Server Technologies; Client-Side Tools and Technologies; Server-Side Scripting; URL; MIME; Search Engine; Web Server - Apache, IIS, Proxy Server; HTTP Protocol. HTML: Introduction to HTML & DHTML; Difference between HTML & DHTML; HTML Basics Tags; Formatting Tags in HTML; HTML Page Layout and Navigation Concepts; Semantic Elements in HTML; List; Type of List Tags, Tables and Form Tags in HTML; Multimedia Basics - Images, iFrame, Map Tag; Embedding Audio and Video Clips on a Webpage. Skill Based/ Participative/Experiential Learning – Quiz.	**15**
UNIT – 2	
Introduction to XML: XML Syntax, XML Tree, Elements, Attributes, Namespace, Parser, XSLT DOM, DTD, Schema. Introduction to CSS: CSS Syntax, CSS Selectors, CSS Background Cursor, CSS Text Fonts, CSS List, CSS Tables, CSS Box Modeling, Display Positioning, Floats, CSS Gradients, Shadows, 2D and 3D Transform, Transitions, CSS Animations. Introduction to JavaScript: JavaScript Data Type and Variables, JavaScript Operators, Conditional Statements, Looping Statements, JavaScript Functions, Number, Strings, Arrays, Objects in JavaScript, Window and Frame Objects, Event Handling in JavaScript, Exception Handling, Form Object and DOM, JSON, Browser Object Model. Skill Based/ Participative/Experiential Learning – Simple Application Development.	**16**
UNIT – 3	
Introduction to Servlets: Common Gateway Interface (CGI), Lifecycle of a Servlets, Deploying Servlet, The Servlets API, Reading Servlets Parameters, Reading Initialization Parameters, Handling HTTP Request & Responses, Using Cookies and Sessions, Connecting to a Database using JDBC. Skill Based/ Participative/Experiential Learning – Group Assignment.	**12**

UNIT – 4	
Web Security: Authentication Techniques, Design Flaws in Authentication, Implementation Flaws in Authentication, Securing Authentication, Path Traversal Attacks; Injecting into Interpreted Contexts, SQL Injection, NoSQL Injection, XPath Injection, LDAP Injection, XML Injection, HTTP Injection, Mail Service Injection; Types of XSS, XSS in Real World, Finding and Exploiting XSS Vulnerabilities, Preventing XSS Attacks. Skill Based/ Participative/Experiential Learning – Case Study.	**13**

Text Books:

1. Programming the World Wide Web: Robert W Sebasta, 4th Edition, Pearson.
2. Web Technologies – HTML, javaScript, PHP, Java, JSP, ASP.NET, XML & AJAX – Black Book: Kogent Learning Solutions Inc., Dreamtech Press, 2009.
3. Web Security for Developers – Real Threats, Practical Defense: Malcolm McDonald, Illustrated Edition, No Starch Press.
4. Internet and Web Application Security: Maike Harwood and Ron Price, 3rd Edition, Jones & Bartlett Learning.

References:

1. Web Programming – Building Internet Applications: Chris Bates, 2nd Edition, Wiley Dreamtech Press.
2. Java Server Pages: Hans Bergsten, O'Reilly, SPD.
3. Java Script: D Flanagan, O'Reilly, SPD.
4. Internet and World Wide Web – How to Program: Dietel and Nieto, Pearson.
5. Internet Security – How to Defend Against Attackers on the Web: Mike Harwood, 2nd Edition, Jones & Bartlett Learning.
6. Beginning Web Programming: Jon Duckett, WROX.
7. Web Applications – Concepts and Real-world Design: Knuckles, Wiley-India.
8. https://www.codingninjas.com/studio/library/complete-introduction-to-web-technology
9. https://www.tutorialspoint.com/web_developers_guide/web_basic_concepts.htm
10. https://www.halvorsen.blog/documents/programming/web/web.php

PRACTICAL COMPONENT

PART A

1. Design Web Pages for your College containing College Name, Logo, Departments List using href and List Tags.
2. Create a Class Timetable using Table Tag.
3. Write a HTML Code to Design Student Registrations Form for your College Admission
4. Design Web Pages which include Multi-Media Data (Image, Audio, Video, GIFs etc.).
5. Create a Web Page using Frame.
6. Write HTML Code to Develop a webpage having two Frames that divide the Webpage into two equal rows and then divide the row into equal columns. Fill each Frame with a Different Background Color.
7. Write CSS Code to format your ID Card using Inline CSS.
8. Using HTML and CSS, Display Text "Hello India!" on top of an Image of India-Map, using an Overlay.

PART B

Write JavaScript Program to:

1. Perform Basic Arithmetic Operations.
2. Demonstrate Control Statements.
3. Implement JavaScript Object Concept.
4. Create and Insert Data into an Array.
5. Validate an Email Address.

Using Servlet, Write a Program to:

6. Print System Date & Time.
7. Accept Number from HTML File and Display (Server-side Servlet).
8. Demonstrate the Life-Cycle of a Servlet Application.
9. Create a Dynamic Web Page with DB Connectivity.

Note: Student has to execute a minimum of 7 programs in each part to complete the Lab course.

Course Articulation Matrix - 232649

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	-	3	1	-	1	2	1	-	2
CO2	2	2	2	1	2	-	-	1	2	1	1	2
CO3	1	1	2	-	2	-	-	1	2	1	1	2
CO4	1	2	2	-	2	1	1	3	2	1	1	2
Wtd. Avg.	**1.5**	**1.75**	**2**	**1**	**2.25**	**1**	**1**	**1.5**	**2**	**1**	**1**	**2**

DSC(8) Syllabus for B.Sc. Computer Science

Semester VI

Course Code: 232650	**Course Title:** **DSC(8) -** Statistical Computing & R Programming (Theory) **DSC(8) Lab -** R Programming Lab (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Design and Develop R Programs using R Constructs.

CO2: Acquire Knowledge on Basics of Statistics, Common Probability Distributions and Data Visualization.

CO 3: Conduct and Interpret Hypothesis Tests on various Data Sets to Aid Decision Making.

CO 4: Implement Simple & Multiple Linear Regression on Data for Procuring Predictive Data and Exert Advanced Graphics on Charts.

Course Content

Content	Hours
UNIT – 1	
Basic R Programming Concepts: Introduction of the Language; Identifiers & Constants; Datatypes; Objects/Data Structures in R – Vectors, List, Matrices, Arrays, Data Frames; R Operators; Control Statements – Conditional & Looping; Functions in R Programming; Manipulation Functions – Vectors, Matrix, Strings; Exceptions; Scope of R Variables; Installing & Loading Packages in R; Reading & Writing Files. Skill Based/ Participative/Experiential Learning – Group Discussion.	**15**
UNIT – 2	
Statistics & Probability: Basic Data Pre-Processing Techniques; Statistics Basic – Mean, Median, Mode, Standard Deviation, Variance; Probability Basics - Common Probability Distributions; Common Probability Mass Functions - Bernoulli, Binomial, Poisson Distributions; Common Probability Density Functions - Uniform, Normal, Student's T-Distribution. **Basic Data Visualization:** Line Chart, Pie Chart, Histogram & Density Plots, Dot Plots, Box Plots, Scatter Plots. Skill Based/ Participative/Experiential Learning – Activity on Data Collection & Data Pre-Processing.	**13**
UNIT – 3	
Statistical Testing and Modelling: Sampling Distributions, Hypothesis Testing, Components of Hypothesis Test, Testing Means, Testing Proportions, Testing Categorical Variables, Errors and Power, Analysis of Variance. Skill Based/ Participative/Experiential Learning – Quiz.	**14**
UNIT – 4	
Regression & Advanced Plotting: Data for Modelling – Test & Training Splits, Creating Sample Groups, Data Reduction; Regression - Simple Linear Regression, Multiple Linear Regression, Linear Model Selection and Diagnostics; Advanced Graphics - Plot Customization, Plotting Regions and Margins, Point and Click Coordinate Interaction, Customizing Traditional R Plots, Specialized Text and Label Notation, Defining Colors and Plotting In Higher Dimensions, Representing and Using Colors, 3D Scatter Plots. Skill Based/ Participative/Experiential Learning – Simple Application Development.	**14**

Text Books:

1. Data Science R – A Step by Step Guide with Visual Illustrations & Examples: Andrew Oleksy, (Independently Published), 2018.
2. Practical Data Science with R: Nina Zumel and John Mount, Manning, 2014.
3. Applied Statistics & Probability for Engineers: Bouglas C et al., John Wiley & Sons, 2005.

References:

1. The Book of R – A First Course in Programming and Statistics: Tilman M Davies, San Francisco, 2016.
2. Statistical Computing using R Software: Vishwas r Pawgi, Nirali Prakashan Publisher, 2022.
3. https://www.youtube.com/watch?v=KlsYCECWEWE
4. https://www.geeksforgeeks.org/r-tutorial/
5. https://www.tutorialspoint.com/r/index.htm
6. https://www.knowledgehut.com/blog/data-science/probability-and-statistics-for-data-science

PRACTICAL COMPONENT

PART A

Write an R Program to:

1. Demonstrate Variables, Constants & Datatypes.
2. Demonstrate R Objects.
3. Demonstrate R Functions.
4. Demonstrate various Operators.
5. Implement a Searching Technique.
6. Implement a Sorting Technique.
7. Demonstrate In-Built Math and String Functions.
8. Demonstrate In-Built Statistical and Probability Functions.

PART B

Write an R Program to:

1. Perform Linear Algebra Operations on Vectors and Matrices.
2. Demonstrate the Installing and Use of Packages.
3. Load, Manipulate and Analyze Data.
4. Demonstrate various Data Pre-Processing Techniques.
5. Visually Represent Objects by Creating Graphs. (Line Chart, Pie Chart, Histogram & Density Plots, Dot Plots, Box Plots, Scatter Plots**).**
6. Implement Simple & Multiple Linear Regression.
7. Demonstrate Advanced Graphics.

Note: Student has to execute a minimum of 6 programs in each part to complete the Lab course.

Course Articulation Matrix - 232650

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	1	2	-	-	-	2	-	-	2
CO2	1	2	2	-	1	-	-	-	1	1	-	3
CO3	2	2	2	-	2	1	1	1	1	1	-	3
CO4	1	2	2	-	2	1	1	-	1	1	1	3
Wtd. Avg.	**1.5**	**2**	**2.25**	**1**	**1.75**	**1**	**1**	**1**	**1.25**	**1**	**1**	**2.75**

SKILL ENHANCEMENT COURSE (SEC)

Course Code: 23LORCMS01	**Course Title: SEC(4)** - Logical Reasoning
Course Credits (L:T:P): 02 (2:0:0)	**Hours of Teaching/Week:** 2 Hours
Total Contact Hours: 28 Hours	**Formative Assessment Marks:** 50
Exam Duration: 2 Hour	**Semester End Examination Marks:** 50

Course Outcomes (COs):

CO1: Analyze and Design better Solutions for Day-to-Day Situations/Challenges.
CO2: Develop and Interpret Data in an efficient way while Solving Problems.
CO3: Apply Critical Thinking to Real-time Situations for better Problem Solutions.

Course Content

MODULE – 1: Arithmetic Reasoning	
Analytical Thinking; Syllogistic Logic; Problem Solving; Number System; LCM & HCF; Divisibility Test; Surds & Indices; Logarithms; Ratio, Proportions and Variations; Partnership; Time, Speed and Distance; Work Time Problems.	**10 Hours**
MODULE – 2: Data Interpretation	
Numerical Data Tables; Line Graphs, Bar Charts, Pie Charts, Mix Diagrams; Geometrical Diagrams and other forms of Data Representation.	**09 Hours**
MODULE – 3: Lateral Thinking, Reasoning & Logic	
Verbal and Non-Verbal Logic; Family Tree; Linear Arrangements; Circular and Complex Arrangement; Conditionality and Grouping; Sequencing and Scheduling; Selections; Networks; Venn Diagram in Logical Reasoning.	**09 Hours**

Text Books:

1. A Modern Approach to Verbal and Non-Verbal Reasoning: R S Agarwal, Sultan Chand and Sons, New Delhi.
2. Quantitative Aptitude: R S Agarwal, Sultan Chand and Sons, New Delhi.

References:

1. Verbal and Non-Verbal Reasoning: Dr. Ravi Chopra, MacMillan, India.
2. Lateral Thinking: Dr. Edward DeBono, Penguin Books, New Delhi.

Course Articulation Matrix – 23LORCMS01

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	-	1	1	1	-	1	1	-	2
CO2	2	2	2	1	2	1	-	-	1	2	1	2
CO3	2	3	3	2	1	2	1	1	1	1	1	2
Wtd. Avg.	**2**	**2.67**	**2.67**	**1.5**	**1.33**	**1.33**	**1**	**1**	**1**	**1.33**	**1**	**2**

Course Code: 23INTCMS01	**Course Title: SEC(4)** - Internship
Course Credits: 02	**Hours of Teaching/Week: ---**
Total Contact Hours: (90 Hours Internship)	**Formative Assessment Marks:** 100

Note: This course will run as per the guidelines defined by the BoS, Computer Science, University of Mysore, Mysuru.

Course Outcomes (COs):

CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.

CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

Internship to be assessed for 100 Marks, C1 to be conducted for 50 Marks & C2 to be conducted for 50 Marks. There will be no C3 for Internship.

Course Articulation Matrix – 23INTCMS01

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	-	-	1	3	3	2	2
CO2	3	3	3	3	3	2	1	1	3	3	2	2
Wtd. Avg.	**3**	**3**	**3**	**3**	**3**	**2**	**1**	**1**	**3**	**3**	**2**	**2**

Continuous Internal Assessment/ Evaluation Pattern for DSC

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

DSC	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Continuous Internal Assessment/ Evaluation Pattern for Internship/Logical Reasoning(SEC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 50:50 for IA and Semester End Examinations respectively.

INTERNSHIP /LOGICAL REASONING (SEC)	THEORY/ PRACTICAL
Total Marks	100 Marks
Continuous Assessment – 1 (C1)	50 Marks
Continuous Assessment – 2 (C2)	50 Marks

Continuous Internal Assessment/ Evaluation Pattern for Cyber Security/ Employability Skills (SEC)

Total marks for the course shall be based on continuous assessments and semester end examinations. The pattern is 50:50 for IA and Semester End Examinations respectively.

SEC	THEORY
Total Marks	100 Marks
Continuous Assessment – 1 (C1)	20 Marks
Continuous Assessment – 2 (C2)	30 Marks
Semester End Examination (C3)	50 Marks

Evaluation Process of C1, C2 and C3 Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the principal. The principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

DSC	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Any other Assessment Pedagogy	-	20	20
Total	**20**	**20**	**40**

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

  Part-A Program(C1): 10 marks

  Part-B Program(C2): 10 marks + Record: 05 marks = 15 marks
- The student is evaluated for 25 marks in C3 as per the following scheme:

Assessment Criteria		Marks
Program - 1 from Part A Program - 2 from Part B	Writing the Program	10
Execution and Formatting (Any one program: Decided by the External Examiner)		10
Viva Voce		05
TOTAL		**25**

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively of the semester. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

The student is evaluated for 50 marks each in C1 and C2 as per the following scheme:

Project Progress Presentation (C1): 25 marks + Report: 25 marks = 50 marks

Project Progress Presentation (C2): 25 marks + Report: 25 marks = 50 marks

The Internship report shall be prepared on the following guidelines.

1. Size of the Internship report shall be between 5-10 pages, printed on both sides on A4 paper. The text should be of 12pt to 14pt size, one-half or double spaced for maximum readability.

2. Two copies should be submitted. One copy of the report shall be submitted to the college, duly signed by the Teacher In-Charge, and the other copy shall be retained by the student.

DSC Computer Science Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** $2\frac{1}{2}$ Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part - A and Part – B.
- Part – A: Should consist of 12 Questions (3 Questions from each Unit).
- Part – B: Should consist of 4 Main Questions (1 from Each Unit) with 2 Sub Questions where internal split is permitted.

PART – A

Answer any EIGHT Questions. Each Question carries 2 Marks. 8Q X 2M = 16 Marks

1. a.
   b
   c.
   .
   .
   k.
   l.

PART – B

Answer ALL the Questions. Each Main carries 11 Marks. 4Q X 11M = 44 Marks

2. a.
   b.

   OR

   c.
   d.

3. a.
   b.

   OR

   c.
   d.

4. a.
   b.

   OR

   c.
   d.

5. a.
   b.

   OR

   c.
   d.

Cyber Security/ Employability Skills Theory Question Paper Pattern

Max. Marks: 50 Marks **Exam Duration:** 2 Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part – A and Part – B.
- Part – A: Should consist of 12 Sub Questions (4 Questions from each Unit).
- Part – B: Should consist of 3 Main Questions (1 from Each Unit) with 2 Sub Questions where internal split is permitted.

PART – A

Answer any TEN Questions. Each Question carries 2 Marks. 10Q X 2M = 20 Marks

1. a.
   b
   c.
   .
   .
   k.
   l.

PART – B

Answer ALL the Questions. Each Main Carries 10 Marks. 3Q X 10M = 30 Marks

2. a.
   b.

   OR

   c.
   d.

3. a.
   b.

   OR

   c.
   d.

4. a.
   b.

   OR

   c.
   d.

Logical Reasoning (SEC) Theory Question Paper Pattern

Max. Marks: 50 Marks **Exam Duration:** 2 Hour

Instructions: Paper Setting

- The Question Paper consists of 3 Main Questions.
- Question 1: Should consist of 10 Questions (Multiple Choice Questions – minimum 3 from Each Unit).
- Question 2: Should consist of 3 Questions (1 from Each Unit) where internal choice and internal split is permitted.
- Question 3: Should consist of 3 Questions (1 from Each Unit) where internal split is permitted.

1. Answer all TEN Questions. Each Question carries 1 Mark. 10Q X 1M = 10 Marks

a.
b.
.
.
.
j.

2. Answer any TWO Questions. Each Question carries 5 Marks. 2Q X 5M = 10 Marks

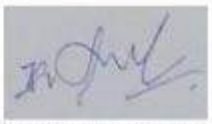
a.
b.
c.

3. Answer ALL Question. Question carries 10 Marks. 3Q X 10M = 30 Marks

a.
b.
c.

APPROVED BY THE FOLLOWING BoS MEMBERS

(1) Smt. Hamsaveni L



(2) Dr. Suresh K

(3) Smt. Lavanya P G

(4) Smt.Rachana C R

(5) Sri. Santhosh Kumar

(6) Sri. Mahendra J M

(7) Smt. Shruthy Poonacha

(8) Smt. Radhika Rani

FIRST-YEAR SYLLABUS

Course Structure (NEP 2020)

Discipline Specific Course (DSC) and Open Elective (OE)

I Year

Course type, code and Title		Hours/week		Credits	Maximum Marks			Exam Duration	Total Marks
		L	T/P	L: T: P	C 1	C 2	C 3		
Criminology & Forensic science - I Sem									
DSC(1)	211172	Fundaments of Criminology.	4	0	4:0:2 (6 credits)	20	20	60	2 ½ hours	150
DSC(1) - Lab		**Lab Practical on-** Fundaments of Criminology.	0	4		10	15	25	3 hours	
OE	21OECRI101	**1.** Police Organization In India.	3	0	3:0:0 (3 credits)	20	20	60	2 ½ hours	100
	21OECRI102	**2.** Elements of Forensic Science.								
	Anyone to be opted									

<table>
<tr><th colspan="11">Criminology & Forensic science - II Sem</th></tr>
<tr><td rowspan="2">DSC(2)

DSC(2) - Lab</td><td rowspan="2">211272</td><td>Criminalistics .</td><td>4</td><td>0</td><td rowspan="2">4:0:2
(6 credits)</td><td>20</td><td>20</td><td>60</td><td>2 ½ hours</td><td rowspan="2">150</td></tr>
<tr><td>Lab Practical on- Criminalistics .</td><td>0</td><td>4</td><td>10</td><td>15</td><td>25</td><td>3 hours</td></tr>
<tr><td rowspan="3">OE</td><td>21OECRI201</td><td>1. Social Problems and Crime.</td><td rowspan="3">3</td><td rowspan="3">0</td><td rowspan="3">3:0:0
(3 credits)</td><td rowspan="3">20</td><td rowspan="3">20</td><td rowspan="3">60</td><td rowspan="3">2 ½ hours</td><td rowspan="3">100</td></tr>
<tr><td>21OECRI202</td><td>2. Finger Print Science.</td></tr>
<tr><td colspan="2">Anyone to be opted</td></tr>
</table>

DSC (1) Syllabus for B.A Criminology and Forensic Science (Basic and Honors)

Semester I

Course Code : 211172	**Course Title** : DSC (1) Fundaments of Criminology(Theory DSC (1)**Lab-**Fundaments of Criminology
Course Credits :06 (4:0:2)	**Hours of Teaching/ Week :** 04 (Theory) 04 (Practical)
Total Contact Hours : 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Mark** :40 (Theory) 25(Practical)
Exam Duration : 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks :** 60 (Theory) 25 (Practical)

Course Outcomes (CO's):

CO1: Recognize the meaning, applicability, and fundamental ideas of criminology; comprehend the numerous theories and methods used in the study and practise of the field.

CO2: Identifying the importance of crime and its various forms, including how criminals are classified as white collar, organised, habitual, professional, etc.

CO3: To research the various criminology schools and comprehend criminal behaviour

CO4: Analysis of various crime prevention kinds and concepts, such as police tactics and environmental design, to familiar with the structure and roles of the NCRB, SCRB, and DCRB.

Content of Theory Course -A1	Hours
Unit–1 Introduction to Criminology	**14**
Chapter-1 Historical Perspective ● Historical perspectives of Criminology ● Nature, origin and scope of Criminology ● Deviance, social context of deviance, delinquency ● Criminology and its relations with other social sciences – Criminology's interdisciplinary nature. **Chapter-2 Concept of Crimes** ● Crime–Etymology. ● Meaning, Definitions and Characteristics. ● Difference between Crime, Sin, Vice and Tort. ● Classification of Crimes.	
Unit–2 Explanations of Crime	**14**
Chapter-3 Explanation of Crime by Different Schools ● Schools of Criminology: Meaning and its Importance in Explanation of Crime ● Pre-Scientific schools: Demonological and Free Will Thoughts. **Chapter-4 Classical School** ● Classical school, Proponent and their contribution ● Neo-classical school ● Positive School-Biological positivism, profounder(Lombroso, Hooton, Glueck) contribution ● Cartographic school, profounder contribution	

Unit–3 Contemporary explanation of Crime and Criminal Behaviour	14
Chapter-5 Sociology of Crime ● Sociological Explanation ● Differential association, Differential Opportunity and Multi-Factor Approach **Chapter-6 Criminal Profiling** ● Historical perspective and development ● Making of a profile ● Investigative leads **Chapter-7 Other Forms of Crimes & Types Criminals** ● Organized crime, White Collar Crime, Cybercrime and Environmental crime ● Habitual offenders, Professional criminals and Recidivists ● Violent and aggressive offenders, sexual offenders	
Unit–4 Prevention of Crime and Crime Statistics	**14**
Chapter-8 Concept of Crime Prevention ● Definition of concepts: Primary, secondary and tertiary crime prevention ● Prevention of various types of crime and Methods: Punitive methods, defense methods, intervention method– ● Crime Prevention Through Environmental Design (CPTED)–Crime prevention by police–Crime Prevention Organizations. **Chapter-9 Crime Statistics and Current Trend** ● Crime statistics: Meaning and Its Importance ● National Crime Record Bureau: Reporting crime and Recording crime ● Crime/victim surveys: International crime comparisons, Changing crime patterns and Unreported crime.	

Text Books:

1. Conklin, J. E. (2001). Criminology. New York: Macmillan Publishing Company. Edelston, C. D., & Wicks, R. I. (1977). An introduction to criminal justice. New York: Gregg Division, McGraw-Hill.
2. Hagan, F. (2017). Introduction to Criminology (9th ed.). Los Angeles: SAGE.
   Harry E., Friday, P., Roebuck, J., & Edward, S. (1981). Crime and punishment: An introduction to Criminology. New York: Free Press Hughes, G. (2002). Crime prevention and community safety: New directions. London: Sage.

3. Jeffery, C. R. (1977). Crime prevention through environmental design. Beverly Hills, CA: Sage Publications.
4. Lab, S. (2013). Crime prevention (8th ed.). Elsevier.
5. Siegel, L. (2017). Criminology: Theories, Patterns and typologies (13th ed.). Sydney: Cengage Learning.
6. Sutherland, E. H., & Cressey, D. R. (2010)- Principles of Criminology. Philadelphia 10th Edition, PA: Lippincott.
7. Void , G., & Bernard, T. J. (1986). Theoretical Criminology. New York: Oxford University Press.
8. Ram Ahuja (2000) Criminology, Rawat Publications
9. Paranjape N.V (2015) Criminology, Penology and Victimology Sixteenth edition, Central Law Publications
10. Tim Newburn Criminology.
11. Adler, Multer , Laifurrn Criminology

Journals:

CriminologyISSN:1745-9125

International Criminology, springer.

Asian Journal of Criminology, springer.

Digital References:

1. https://onlinelibrary.wiley.com/journal/17459125
2. https://www.longdom.org/scholarly/criminology--journals-articles-ppts-list-3079.html
3. https://scholarlycommons.law.northwestern.edu/jclc/
4. http://www.inquiriesjournal.com/topics/16/criminology-and-criminal-justice
5. https://psycnet.apa.org/record/1958-04359-000
6. https://journals.sagepub.com/doi/abs/10.1177/1362480607075851
7. http://ecite.utas.edu.au/130268
8. https://eprints.qut.edu.au/198603/
9. https://www.jstor.org/stable/1140864
10. https://www.jstor.org/stable/23638473

Content of Lab Practical Courses DSC- 1:

Credits: 02 **Marks: 25+25=50**

List of Experiments to be conducted

1. Analysis of news items of criminological importance from the daily newspapers
2. Collection of crime news clippings
3. Study of crime cases elucidating the criminal behavior of the accused.
4. Analysis of criminal cases to find out which of the theory of criminology explains it.
5. Study of criminal cases where the media has acted as a pressure group.
6. Classification and types of cyber-crimes.
7. Crime statistics analysis - a crime against person and property
8. Study of Graphical Representation of Crime Statistics
9. Kim's Game: Observation, Retention, Memory, and Interpretation.
10. Infographic representation of Crime Statistics From Secondary.

Course Articulation Matrix - 211172

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	1	-	1	1	1	1	2	2	1	1
CO2	2	2	1	1	1	2	2	1	2	2	1	2
CO3	2	2	2	3	1	1	1	2	1	2	2	2
CO4	1	3	3	3	3	2	2	2	3	3	3	2
Weighted Average	1.75	2.25	1.75	2.33	1.5	1.5	1.5	1.5	2	2.25	1.75	1.75

OE (1) Syllabus for All Programs (Except B A)

Semester I

Course Code: 21OECRI101	**Course Title** : OE (1) Police Organization in India (Theory)
Course Credits : 03 (3:0:0)	**Hours of Teaching/ Week :** 03 (Theory)
Total Contact Hours : 42Hours (Theory)	**Formative Assessment Mark** :40 (Theory)
Exam Duration : 2 ½ Hours (Theory)	**Semester End Examination Marks :** 60 (Theory)

Course outcomes (CO's):

CO1: Recognize the idea behind and goals of the Indian Police Organization, as well as how it has evolved through time to meet societal demands.

CO2: Acquire understanding about the organization, structure, and functions of the police as well as their historical evolution.

CO3: Illustrate the various Police Units at the State and the Center& Learn about the various Auxiliary Units and how they operate.

Content of Theory Course	Hours
Unit-I: Introduction to Police Organization	**14**
Chapter-1 Police Organization: Concept and Brief Historical Background **Chapter-2** Central Police Organization and Institutes: Organizational Basis and types Line Units: Assam Rifles, Central Reserve Police Force, Border Security Force, Indo Tibetan Border Police, Central Industrial Security Force and Seema Suraksha Bal. Staff Units: BPR&D & NCRB. Mixed Units: CBI, RAW and Narcotic Control Bureau – NCB. **Chapter-3** Relationship between Police and Local Government: Magistracy, Executive Magistrates and Other Departments (Forest, Excise, Prison, Health etc.) **Chapter-4** Police Administration: Enforcing law of the land, Maintaining Law and Order, other citizen services, etc.	
Unit-II: State Police and Special Units	**14**

Chapter-5 General Organizational structure, State Crime Record Bureau, State Finger Print Bureau, State Forensic Science Laboratory and Intelligence Department/Special branch. **Chapter-6** Types of Police station and their Function: Civil, Traffic and Women police stations, cyber-crime police stations. **Chapter-7** Vigilance Units: ACB, Lokayukta and other institutional vigilance (KPTCL, KSRTC, BMTF, BDA, Revenue Task Force)	
Unit-III: Auxiliary Units and Other Organizations	**14**
Chapter-8 Home guards, Special Police Officers, Students Police Cadets and Civil Defense **Chapter-9** Karnataka State and District Legal Authority and their functions **Chapter-10** State women commission, State SC/ST and Minority Commissions, State Human Rights Commissions.	

Text Books:

1. Banerjee, D, 2005, Central Police Organization, Part I & Part II, Allied Publishers. Pvt. Ltd.,
2. Doval Ajit and Lal BR, 2010, Manas Police Security Year Book 2010-2011, Manas Publications.
3. Earle Howard H. 1970, Police Community relations, Charles C. Thomas Publisher.
4. Ghosh Gautam, 2007 Police Accountability at the Cutting Edge Level, APH Publishing Corporation.
5. Guharoy J T, 1999, Policing in the 21st Century Indian Institute of Public Administration.
6. Gupta, Anandswarup, 2007, Crime and Police in India, Sahitya Bhavan, Agra.
7. James, Vadckumchery, 1998, Crime, Police and Correction, APH Publishing C., New Delhi.
8. Justice Mallimath Committee on Criminal Justice Reforms, Universal Law Pub, 2003.
9. K. Padmanabaiah Committee on Police Reforms, 2001.
10. Ramanjam,T, 1992, Prevention and Detection of Crime, Madras Book Agency.
11. Misra K.K., 1987, Police Administration in Ancient India, K.K. Publications.
12. Mayhill, Parnela D, 1998 Police – Community relations & administration of justice, Prentice Hall Englewood Cliffs.
13. Ramanjam,T, 1992, Prevention and Detection of Crime, Madras Book Agency.
14. Singh SoibamIbocha, 2007 Community Policing, Akansha Publishing House, New Delhi
15. Srivastava Aparna, 1999, Role of Police in Changing Society, APH Publishing House.
16. Karnataka Police Manual, Vol-i, ii and iii.

Journals:

Indian Police Journal published by Bureau of Police Research and Development New Delhi.

Crime in India published by National Crime Record Bureau. MHA Government of India New Delhi

Course Articulation Matrix – 21OECRI101

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	1	3	2	3	2	2	3	2	2	2	3
CO2	2	3	3	2	2	2	1	3	2	3	2	1
CO3	2	2	2	3	1	2	2	2	2	2	3	2
Weighted Average	2	2	2.66	2.33	2	2	1.66	2.66	2	2.33	2.33	2

OE (1) Syllabus for All Programs (Except B A)

Semester I

Course Code: 21OECRI102	**Course Title** : OE(1)Elements of Forensic science (Theory)
Course Credits :03 (3:0:0)	**Hours of Teaching/ Week :** 03 (Theory)
Total Contact Hours : 42 Hours (Theory)	**Formative Assessment Mark** :40 (Theory)
Exam Duration : 2 ½ Hours (Theory)	**Semester End Examination Marks :** 60 (Theory)

Course outcomes (CO's):

CO1: Recognize the meaning, characteristics, applications, and historical background of forensic science.

CO2: Acquire basic knowledge on fundamental components, several branches, and guiding concepts of forensic science.

CO3: What are the central and state forensic science laboratories' responsibilities and significance & describe the functions of the DTI, BPRD, and National Crime Record Bureau.

Content of Theory Course	Hours
Unit-I: Fundamental Concepts of Forensic Science	**14**
Chapter-1 Definitions, Nature, Scope and role of forensic science. **Chapter-2** Historical development and contribution of pioneers **Chapter-3** Principles of forensic science	
Unit-II: Branches of Forensic Science	**14**
Chapter-4 Branches of Forensic Science **Chapter-5** Traditional and Contemporary **Chapter-6** Frye Case and Daubert Standards.	
Unit-III: Forensic Science Laboratories and Training institutes	**14**
Chapter-7 Hierarchical set up of Central Forensic Science Laboratories, State Forensic Science Laboratories and Directorate of Forensic Science. **Chapter-8** Government Examiners of Questioned Documents and Fingerprint Bureaus. **Chapter-9** National Crime Records Bureau, Police & Detective Training Institutes, **Chapter-10** Bureau of Police Research & Development,	

Text Books:

1. B.B. Nanda and R.K. Tiwari, Forensic Science in India: A Vision for the Twenty First Century, Select Publishers, New Delhi (2001).
2. M.K. Bhasin and S. Nath, Role of Forensic Science in the New Millennium, University of Delhi, Delhi (2002).
3. S.H. James and J.J. Nordby, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2nd Edition, CRC Press, Boca Raton (2005).
4. W.G. Eckert and R.K. Wright in Introduction to Forensic Sciences, 2nd Edition, W.G. Eckert (ED.), CRC Press, Boca Raton (1997).
5. R. Safferstein, Criminalistics, 8th Edition, Prentice Hall, New Jersey (2004).

Journals:

Journal of Forensic Research ISSN: 2157-7145

Journal of Forensic Sciences & Criminal Investigation, ISSN: 2476-1311.

Course Articulation Matrix- 21OECRI102

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	1	2	3	3	2	2	1	2	1	3	2
CO2	2	3	3	3	3	2	2	1	2	1	2	2
CO3	2	3	2	3	3	2	1	1	3	2	2	2
Weighted Average	2.3	2.3	2.3	3	3	2	1.6	1	2.3	1.3	2.3	2

DSC (2) Syllabus for B.A Criminology and Forensic Science (Basic and Honors)

Semester II:

Course Code : 211272	**Course Title** : DSC (2) Criminalistics (Theory) DSC (2)**Lab**-Criminalistics
Course Credits :06 (4:0:2)	**Hours of Teaching/ Week :** 04 (Theory) 04 (Practical)
Total Contact Hours : 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Mark** :40 (Theory) 25(Practical)
Exam Duration : 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks :** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Interpreting meaning, range, and fundamental ideas of criminalistics; demonstrate the many instruments and methods used in the application of the subject.

CO2: Acquire basic knowledge on the importance of evidence and the various categories that physical evidence falls under, such as blood, fibre, paint, firearms, fingerprints, etc.

CO3: Examine the forensic records, the instruments and methods used , the kinds of forgeries, the different kinds of handwriting and its characteristics, etc.

CO4: Elaborating the fundamental concepts and steps in crime scene reconstruction, outline the range and significance of medical evidence, including oral and documentary evidence & the significance of medical-legal autopsies, the kinds of wounds they reveal, etc.

Content of Theory Course	Hours
Unit I: Introduction – Criminalistics	14
Chapter-1 Criminalistics: Meaning, Conceptual definitions and Scope **Chapter-2** Basic principles; Forensic tools and techniques **Chapter-3** Application in Criminal Investigation.	
Unit II: Physical Evidence	14
Chapter-4 Physical Evidence: Significance of evidence and Lockard‟s principle **Chapter-5** Types of evidence – Classification of physical clues, evidence: Biological, Chemical and Physical. **Chapter-6** Collection of evidence – Preservation of evidence, chain of custody, blood, fiber, paint, firearms, tyre marks, fingerprints, footprints, bite marks.	
Unit III: Forensic Documents	14
Chapter-7 Forensic Document Examination: Introduction and Types of documents **Chapter-8** Tools and techniques for examination and identification **Chapter-9** Types of forgeries, characteristics and detection **Chapter-10** Types of handwriting and its characteristics.	
Unit IV Crime Scene Management (CSM)	14
Chapter-11 Nature and importance of CSM. **Chapter-12** Basic principles and stages involved. **Chapter-13** Examination of witness and statement of suspect. **Chapter-14** Mobile forensic units, Dog squad and other scientific aids.	

Text Books:

1. Dekal, V. (2014). Exam preparatory manual for undergraduates: Forensic medicine & toxicology (theory &practical). New Delhi: Jaypee Brothers Medical.
2. Gardner, R., & Bevel, T. (2009). Practical crime scene analysis and reconstruction. Boca Raton, FL: CRC Press.
3. Lewis, J. (2014). Forensic document examination. New York: Academic Press. Nagesh kumar, G. (2007). Practical forensic medicine. New Delhi: Jaypee Brothers
4. Nanda, B., & Tewari, R. (2001). Forensic science in India: A vision for the twenty- first century. New Delhi: Select Publishers.
5. Subrahmanyam, B. (2001). Modi‟s medical jurisprudence & toxicology. New Delhi: Butterworth India.
6. Turvey, B., & Crowder, S. (2017). Forensic investigations – an introduction.
7. Academic Press.
8. Young, T., & Ortmeier, P. (2010). Crime scene investigation. Pearson.

Journals:

Indian journal of criminology and criminalistics, ISSN: 0970-4345
International journal of Forensic and Legal Medicine, ISSN: 1752-928X Journal of Forensic Pathology, ISSN: 2684-1312

Digital Reference

1. https://books.google.co.in/books?hl=en&lr=&id=zIRQOssWbaoC&oi=fnd&pg=PA1&dq=forensic+sc ience+research+articles&ots=wJ-Zt0UQ2U&sig=v7wufZJrViWiMCo3YwG8d0sguCc
2. https://link.springer.com/article/10.1007%2Fs10657-005-4196-6#citeas
3. https://www.ojp.gov/ncjrs/virtual-library/abstracts/forensic-science-handbook-volume-2
4. https://books.google.co.in/books?hl=en&lr=&id=cuTnMnlvZMC&oi=fnd&pg=PP1&dq=forensic+scie nce+research+articles&ots=dGYy_obgyD&sig=pRc8BvVP4AOrw5E7vfCfwhoWFR8
5. https://books.google.co.in/books?hl=en&lr=&id=wK9c4KttXj0C&oi=fnd&pg=PP1&dq=forensic+scie nce+research+articles&ots=b3wV8PRtsy&sig=t1DV5xrKLcUCPwYOBSkxYQW8_JI

Semester-II

Content of Lab Practical Course DSC 2;

Credits: 02 Marks: 25+25=50

List of Experiments to be conducted

1. Identification, location and preservation of physical evidence in crimes including, but not restricted to homicide, suicide, robbery & dacoity, and HBT (Burglary).
2. Scene of crime – documentation, searching sketching (rough and neat), photography and Videography, reconstruction.
3. Searching methods of crime scene- Outdoor scene of crime, Indoor scene of crime, Mobile scene of crime
4. Questioned documents: Collection of standards for comparison, characteristics of handwriting.
5. Questioned documents: Comparison of typewritten and printed documents.
6. Identification of forgeries, collection of standards for detection.
7. Handling, Packing &Forwarding of Biological, Physical & Chemical evidence.

Course Articulation Matrix- 211272

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	2	3	3	2	1	2	2	1	2	3
CO2	2	2	2	3	3	3	2	2	2	2	2	2
CO3	2	3	3	3	3	3	2	2	2	2	3	3
CO4	3	3	3	3	3	2	3	2	3	3	3	3
Weighted Average	2.25	2.5	2.5	3	4	2.5	2	2	2.25	2	2.5	2.75

OE (2) Syllabus for All Programs (Except B A)

Semester II:

Course Code: 21OECRI201	**Course Title** : OE(2) Social Problems & Crime (Theory)
Course Credits :03 (3:0:0)	**Hours of Teaching/ Week :** 03 (Theory
Total Contact Hours : 42 Hours (Theory)	**Formative Assessment Mark** :40 (Theory)
Exam Duration : 2 ½ Hours (Theory)	**Semester End Examination Marks :** 60 (Theory)

Course Outcomes (COs):

CO1: Recognize the various societal issues India faces, as well as the factors that contribute to crime, criminality, and social unrest.

CO2: Describe the many crimes, concerns, and legislation that are relevant to women and children.

CO3: Considering alcoholism and drug abuse associates to communal disturbance and criminality & discuss the consequences of corruption and terrorism on society and the relevant legislation.

Content of Theory Course	Hours
Unit-I: Introduction to Social Problems	**14**
Chapter-1 Social problem and crime: concept, types and stages in the development of social problems. **Chapter-2** Theoretical approaches to social problems, social disorganization, cultural lag, value conflict and personal deviation **Chapter-3** Causes of social problems leading to crime	
Unit-II: Women and Child Related Social Problems and Crimes	**14**
Chapter-4 Child abuse and child labour: Meaning, Causes and effects of child Abuse **Chapter-5** Special Acts - Prohibition of Child Marriage Act 2006, Child labour (Prohibition & Regulation) Act 1986, Immoral Traffic (Prevention) Act 1956 and Protection of Children from Sexual Offences Act, 2012 **Chapter-6** Women Related Issues, Crimes and Laws: Prostitution, Domestic Violence, Dowry Harassment, Sexual Harassment of Women at Workplace, Indecent representation of women, etc.., and related laws, Sati System and Honour killing.	
Unit-III: Other Social Problems	**14**
Chapter-7 Alcoholism: Meaning, definitions of alcoholism causes, consequences and societal costs of alcoholism.	
Chapter-8 Drug Addiction: Nature and impact of drug addiction – Role of family and peer group, Narcotic Drugs and Psychotropic Substance Act. 1985 **Chapter-9** Untouchability, Corruption and Terrorism: Meaning, Types, Causes, and Related Laws	

Text Books:

1. Ram, Ahuja, 1992. Social Problems in India, Rawat Publications, New Delhi.
2. Turner, Jonathan H., 1987; The Structure of Sociological Theory, Fourth Edition, Rawat Publications, Jaipur.
3. Henry, Kenneth, 1978, Social Problems: Institutional and Interpersonal Perspectives, Scott, Fopresman and Company, Illinois, London.
4. Kothari, Rajani, 1988, Transformation and Survival, Ajanta Publications, Delhi.
5. Lerner, Daniel, 1964,The Passing of Traditional Society, The Free Press, London.
6. Polanyi, Karl, 1957, The Great Transformation: The Political and Economic Origin of our Time, Beacon Press, Boston.
7. Merton, Robert K. & Nisbet, Robert, 1976, Contemporary Social Problems, Hercourt Brace Jovanovich, International Editing, New York, Chicago.
8. Singh, Yogendra, 1988, Modernisation o f Indian Tradition, Reprint, RawatPublication, Jaipur.
9. Bhattacharya, Rinki. Ed. 2004. Behind Closed Doors: Domestic Violence in India. New Delhi: Sage.
10. Uberoi, Patricia. Ed. 1993. Family, Kinshipand Marriage in India. Delhi, Oxford University Press.
11. Uberoi, Patricia. 2006. Freedom and Destiny: Gender, Family, and Popular Culture in India. Delhi: Oxford University Press.

Journals:

European Journal on Criminal Policy and Research, Springer
The International Journal for Crime, Justice and Social Democracy ISSN 2202-8005

Digital Reference:

- https ://www.taylorfrancis.com/books /mono/ 10.4324/9780203791578/framing-victim-nancy-berns
- https ://psycnet. apa.org/record/ 1973-31083-001
- https ://academic. oup.com/socpro/article/ 18/3/298/ 1691981?login=true
- https ://www. jstor.org/stable/79 8932
- https ://academic. oup.com/socpro/article-abstract/ 16/4/409/2925015

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

Course Articulation Matrix - 21OECRI201

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	3	2	2	2	1	2	2	3	2	3	3
CO2	2	3	3	3	2	2	2	2	3	2	3	3
CO3	2	2	3	3	2	3	3	2	3	2	3	3
Weighted Average	2	2.6	2.6	2.6	2	2	2.3	2	3	2	3	3

OE (2) Syllabus for All Programs (Except B A)

Semester II:

Course Code: 21OECRI202	**Course Title** : OE (2) Fingerprint Science (Theory)
Course Credits :03 (3:0:0)	**Hours of Teaching/ Week :** 03(Theory)
Total Contact Hours : 42 Hours (Theory)	**Formative Assessment Mark** :40 (Theory)
Exam Duration : 2 ½ Hours (Theory)	**Semester End Examination Marks :** 60 (Theory)

Course Outcomes (CO'S):

CO1: Recognize the significance, meaning, and historical context of fingerprints.
CO2: Analyzing the biological processes involved in the production of fingerprints, as well as the main types.
CO3: Learn how latent fingerprints form and how valuable they are in legal proceedings, describe the imprints and their significance in a judicial inquiry.

Content of Theory Course	Hours
Unit-I: Basics of Fingerprinting	**14**
Chapter-1 Fingerprint: Meaning, Concept and history background, with special reference to India. **Chapter-2** Biological basis of fingerprints, Formation of ridges and Fundamental principles of fingerprinting. **Chapter-3** Types of fingerprints, Fingerprint patterns and Fingerprint characters/minutiae. **Chapter-4** Methods of Recording of Plain and rolled fingerprints. **Chapter-5** Classification of fingerprint record.	
Unit-II: Development of Fingerprints	**14**
Chapter-6 Type of Chance prints at a crime scene and their development. **Chapter-7** Latent fingerprints‟ detection by physical and chemical techniques. **Chapter-8** Preservation of developed fingerprints. **Chapter-9** Digital imaging for fingerprint enhancement.	
Unit-III: Other Impressions and Prints	**14**

Chapter-10 Footprints: Meaning and Importance. **Chapter-11** Casting of foot prints and Electrostatic lifting of latent foot prints. **Chapter-12** Palm prints and their historical importance.	

Text Books:

1. B.S. Nabar., Forensic Science in Crime Investigation, 3rdEdn., Asia Law House, Hyderabad
2. Barry, A.J. Fisher; Techniques of Crime Scene Investigation, 7th Ed, CRC Press, NY, 2003.
3. Bennett, W.W. & Karen, M.Hass, Criminal Investigative, 6th Ed. Worsworth Thompson Leaming, 2001.
4. Forensic Science, An Introduction to Criminalistics. By Peter R.De Forest, R.E. Gaensslen and Henry C. Lee.
5. Forensic Science in Criminal Investigation and Trials, By Sharma. B. R.
6. Safferstein R. "Criminalistics: - An Introduction to Forensic Science".
7. Wertheim K, Maceo A (2002) The critical stage of friction ridge and pattern formation. J for Ident
8. Wilder HH, Wentworth B Personal identification. Boston: Gorham Press 1918.
9. Dror IE, Charlton P, Peron AE (2006) Contextual information renders experts vulnerable to making erroneous identifications. Forensic Science International
10. Snady LZ (2005) Fingerprint evidence. L Law & Policy
11. Vokey JR, Tangen JM, Cole SA (2009) On the preliminary psychophysics of fingerprint identification. Quart J Exp Psycho
12. Senn DR, Stimson PG (2010) Forensic Dentistry. New York: CRC Press.

Journals:

The Journal of Forensic Sciences (JFS) ISSN: 1556-

4029

Digital Reference:

http ://www.fbi.gov/hg/cjisd/ident.pdf

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

Course Articulation Matrix-21OECRI202

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	2	3	2	3	2	1	2	3	1	2	3
CO2	3	3	3	3	3	2	1	2	3	2	3	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3
Weighted Average	3	2.6	3	2.6	3	2	1.3	2.3	3	2	2.6	3

SECOND YEAR SYLLABUS

Course Structure (NEP 2020)

Discipline Specific Course (DSC)

II Year

Course type, code and Title			Hours/week		Credits	Maximum Marks			Exam Duration	Total Marks
			L	T/P	L: T: P	C1	C2	C3		
Criminology & Forensic science - III Sem										
DSC (3)	221372	Police science and criminal Investigation	4	0	4:0:2 (6 credits)	20	20	60	2 ½ hours	150
DSC (3) Lab		**Lab Practical on**- Police science and criminal Investigation	0	4		10	15	25	3 hours	
OE (3)	22OECRI301	**1.** Gender and Crime	3	0	3:0:0 (3 credits)	20	20	60	2 ½ hours	100
	22OECRI302	**2.** Crime scene Investigation								
	Anyone to be opted									
Criminology & Forensic science - IV Sem										
DSC (4)	221472	Correctional Administration	4	0	4:0:2 (6 credits)	20	20	60	2 ½ hours	150
DSC (4) Lab		**Lab Practical on**- Correctional Administration	0	4		10	15	25	3 hours	

DSC (3) Syllabus for B.A Criminology and Forensic Science (Basic and Honors)

Course Code: 221372	**Course Title**: DSC (3) Police Science and Criminal Investigation (Theory) DSC (3**) Lab**-Police Science and Criminal Investigation
Course Credits :06 (4:0:2)	**Hours of Teaching/ Week:** 04 (Theory) 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark** :40 (Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:**60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Recognize the idea behind police science, its role in preventing crime, conducting investigations, and preserving a stable social order.

CO2: Gain expertise of maintaining law and order, enforcing national laws, and managing the police administration.

CO3: Being aware of the many difficulties that police officers encounter on a daily basis.

CO4: Determine many sorts of crime scenes, investigations, and the legal processes that surround them.

Content of Theory course	Hours
Unit – 1 Introduction to Police Science	**15**
Chapter-1 Police administration in India • Role of Police in Independent India, Constitutional provisions regarding policing in India • Police Organization of state Chapter-2 Policing in present scenario. • Introduction to various styles of Policing • Ethics in Policing • Technology and policing • Short comings of policing • Police recruitment, training and Police Reforms • Policing in present scenario	
Unit – 2 Powers, Duties and challenges of Police	**15**

Chapter-3 Powers and duties • Executive powers and duties of police officers in the investigation • Police accountability in India: Courts, Executive Magistrates, State Government, Citizens/ Community, Programmes for redressing public grievances, Police Complaints Authorities Chapter-4 Challenges in policing • Internal and external challenges in policing • Police Image, Police Corruption, Police and Human Rights • Technological short comings and policing	
Unit – 3 Criminal Investigation	**15**
Chapter-5 Basics of Investigation • Objectives of Criminal Investigation • Characteristics and role of Investigating officer Chapter-6 Legal procedures in Investigation • Investigation procedures in traditional, contemporary and special crimes • Registration of FIR, charge sheet, recording of statements, arrest, confession, summons and warrants Execution.	
Unit -4 Crime scene Investigation	**15**
Chapter -7 Crime scene Management • Responsibilities of First responding officer. • Crime scene – Types, search methods, and Documentation. Chapter-8 Physical Clues • Types of physical clues and various crime scenes • Procedures in locating, handling, collecting, packing and forwarding of physical clues, Chain of Custody	

Text Books:

1. Encyclopedia of Police in India. Gosh & Rustumji
2. Police &Political Order in India, P.D.Sharma
3. Indian Police Today, Shankar Sen
4. Inside India Police, Joginder Singh
5. Sharma B.R, 2007, Forensic Science in Criminal Investigation and Trials Universal Law Pub. Co. Pvt. Ltd.
6. Douglas Cruise (2002) The Business of Private Investigations, Texas: Thomas Investigative Publications.
7. Ramanujam T, 1992, Prevention and Detection of Crime, Madras Book Agency
8. Nehad Ashraf, (1992), Police and Policing in India, Common Wealth Publishers, New Delhi

JOURNAL REFERENCES:

1. International journal of police science and management, SAGE
2. The Indian Police Journal
3. The Journal criminal Law, Criminology and Police Science, JSTOR ISSN-15476154

DIGITAL REFERENCES:

1. https://www.ojp.gov/pdffiles1/nij/228922.pdf
   https://www.researchgate.net/publication/340874515_Police_science_as_an_emerging_scientific_discipline.

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

Content of Lab Practical Course DSC-3:

Credits: 02 Marks: 25+25=50

List of Experiments to be conducted

1. Kim's Game
2. Procedure and process of filing complaint to the Police Station
3. Scene of Crime Documentation: rough sketch, final sketch, photography and videography
4. Crime Scene Investigation Methods (Murder, Burglary, Traffic Accident etc.)
5. Methods of Searching the Scene of Crime.
6. Reconstruction of Scene of Crime and report writing
7. Handling, packing and forwarding of physical clues to experts (Fingerprints on articles, Blood stains on articles, hair and fiber samples, Bullets & Cartridge Cases)
8. Crime Maps and analyze trends in criminal activity by using crime data from local police station
9. Research on cold cases and present findings.
10. Crime scene Photographic techniques.

Course Articulation Matrix - 221372

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	2	3	3	2	1	3	3	2	3	3
CO2	2	2	3	3	3	2	1	3	3	2	3	3
CO3	3	3	3	3	3	3	1	3	3	3	3	3
CO4	3	3	3	3	3	3	1	3	3	3	3	3
Weighted Average	2.5	2.5	2.75	3	3	2.5	1	3	3	2.5	3	3

OE (3) Syllabus for All Programs (Except B A)

Course Code: 22OECRI301	**Course Title**: OE (3)**:** Gender and Crime (Theory)
Course Credits :03 (3:0:0)	**Hours of Teaching/ Week** 03 (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Mark** :40 (Theory)
Exam Duration: 2 ½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcomes (CO's):

CO1: Recognize the significance, character, and extent of crime and gender equality.

CO2: Elucidate the difficulties in explaining how gender affects crime from a criminological Perspective

CO3: Being aware of the numerous trends in gender-related crime and how to prevent it & outline the different gender-related crimes committed against minors.

Content of Theory course	Hours
Unit – 1 Gender Equality	**14**
Chapter-1 Gender awareness in Criminology • Gender and crime: Meaning, nature and scope • Gender awareness in Criminology Chapter-2 Gender gap in crime • Gender equality: Meaning, definition • Gender equality and Crime • Cognitive capacities and crime • Situational pressures and gender	
Unit – 2 Gender specific crimes and Criminological studies	**14**
Chapter-3 Criminological theories of gender and crime Chapter-4 Gender in Criminal Justice System • Crimes and Cultural Views • Legal system • Police practice • Court trials Chapter-5 Patterns of Crime • Meaning, definition and nature • Gendered pathways to offending Chapter-6 Women and Crime, Men and Crimes • Female patterns of offending • Rising female criminality • Male patterns of offending • Reason for male criminality	
Unit -3 Crimes against gender specific children	**14**

Chapter-7 Crimes against children • Meaning, Definition, Nature and Scope • Harmful cycle of gender-based violence on children • Causes and impacts of gender-based violence against children Chapter-8 Types of Crimes against Children • Infanticides and feticides • Child trafficking • Child pornography • Labour and street offences, etc • Various procedural rules for protection of children	

Text Books:

1. Fitz-Gibbon, K. &Walklate, S. (2018). Gender, Crime and Criminal Justice, Routledge, ISBN: 9781138656376
2. Mukharjee, S. K. &Scutt, J. A. (1981). Women and Crime, Routledge, ISBN: 9781138186569
3. Silvestri, M. & Crowther-Dowey, C. (2008). Gender and Crime (A Key Approach to Criminology), SAGE Publications
4. Britton, D. M. (2011). The Gender of Crime, Rowman & Littlefield
5. Evans, K & Jamieson, J. (2008). Gender and Crime: A Reader, Open University Press

JOURNAL REFERENCES:

1. Child mal treatment-SAGE
2. International journal on child mal treatment-Springer
3. Women and Criminal Justice – Taylor and Francis
4. Feminist Criminology-SAGE
5. Violence and Gender

DIGITAL REFERENCES:

1. Gender-Based Violence: A Global Threat | Save the Children
2. https://www.open.edu/openlearncreate/mod/oucontent/view.php?id=53771&printable=1
3. (PDF) Gender and Crime: Toward a Gendered Theory of Female Offending (researchgate.net)
4. https://ijcst.journals.yorku.ca/index.php/ijcst/article/download/39737/35977
5. Gender and Theories of Delinquency - Oxford Handbooks

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

Course Articulation Matrix-22OECRI301

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	2	-	-	2	1	1	1	1	2	2
CO2	2	2	3	2	2	3	1	2	2	2	2	2
CO3	3	3	3	2	3	3	2	2	2	2	3	2
Weighted Average	2.3	2.3	2.6	2	2.5	2.6	1.3	1.6	1.6	1.6	2.3	2

OE (3) Syllabus for All Programs (Except B A)

Course Code: 22OECRI302	**Course Title**: OE (3): Crime Scene Investigation (Theory)
Course Credits :03 (3:0:0)	**Hours of Teaching/ Week:** 03 (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Mark** :40 (Theory)
Exam Duration: 2 ½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcome (CO's):

CO1: Be familiar with the techniques for securing, searching, and recording crime scenes.
CO2: Able to perform the skill of gathering, protecting, and packing various kinds of physical and trace evidence at crime scenes.
CO3: Explain the significance of chain of custody in legal terms, recognize the methods and equipment used in the analysis of various types of evidence found at crime scenes.

Content of Theory course	Hours
Unit – 1 Crime Scene Preliminaries	**14**
Chapter-1 Crime Scene and its importance. • Meaning and Types of crime scenes • indoor and outdoor Mobile • primary secondary and tertiary. Chapter-2 Securing and isolating the crime scene. • Crime scene search methods. • Safety measures at crime scenes. • Legal considerations at crime scenes.	
Unit – 2 Crime Scene Documentation	**14**
Chapter-3 Crime Scene Documentation and its importance • Types of documentation of crime scenes • Photography. • Videography, • Sketching and • Recording notes. Chapter-4 Duties of first responders at crime scenes. • Coordination between police personnel and forensic scientists at crime scenes. • The evaluation of 5Ws (who? what? when? where? why?) and 1H (how?).	
Unit -3Crime Scene Evidence Management.	**14**

Chapter-5Classification of crime scene evidence • Locard principle and Importance. • Physical evidence and • Trace evidence. Chapter- 6 Collection, labelling, sealing of evidence. • Hazardous evidence. • Preservation of evidence.	

Text Books:

1. M. Byrd, Crime Scene Evidence: A Guide to the Recovery and Collection of Physical Evidence, CRC Press, Boca Raton (2001).
2. T.J. Gardener and T.M. Anderson, Criminal Evidence, 4th Ed., Wadsworth, Belmont (2001).
3. S.H. James and J.J. Nordby, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2nd Edition, CRC Press, Boca Raton (2005).
4. W.J. Tilstone, M.L. Hastrup and C. Hald, Fisher's, Techniques of Crime Scene Investigation, CRC Press, Boca Raton (2013).

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

Course Articulation Matrix-22OECRI302

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	3	2	3	3	2	1	2	3	1	3	2
CO2	3	3	3	3	3	2	2	2	3	2	3	3
CO3	3	3	3	3	3	2	2	2	3	2	3	3
Weighted Average	2.6	3	2.6	3	3	2	1.6	2	3	1.6	3	2.6

DSC (4) Syllabus for B.A Criminology and Forensic Science

Course Code: 221472	**Course Title**: DSC (4): Correctional Administration (Theory) DSC (4): **Lab**-Correctional Administration
Course Credits :06 (4:0:2)	**Hours of Teaching/ Week:** 04 (Theory) 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark** :40 (Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Outcomes (CO's):

CO1: The importance, nature, and application of criminology and the criminal justice system.

CO2: Outline the ideas and different forms of punishments used in India and other countries in the past and now.

CO3: Explaining the jail as a correctional facility, its varieties the laws that govern it.

CO4: Being aware of the principles underlying alternatives to institutional care for prisoners.

Content of Theory course	Hours
Unit – 1 Introduction to Correctional Administration	**15**
Chapter-1 Penology and correctional administration • Penology – Definition, nature and scope • Correction – Definition, nature and scope • Types of punishment. • Similarities and Differences between punishment and correction **Chapter-2** Theories of Punishment Deterrence theory Retributive theory Preventive theory Reformation theory	
Unit – 2 Prison system	**15**
Chapter-3 Prison and prison organization • Historical development of prison system. • Objectives of Imprisonment • Types of prisons and correctional institutions in India. • Modernization of Prisons in India; Reformation & Rehabilitation approach in Prisons. **Chapter-4** Prison reforms in India • History and evolution of prison legislations in India. • Recommendation of different committees on reformation system. • Prison act and prison manual	
Unit – 3 Institutionalized Treatment	**15**
Chapter-5 Corrections through Institutionalized treatment • Meaning and purpose • Types of institutions: Adult, women and children • Facilities provided in institutions. • Remission, temporary release and premature release **Chapter-6** Legal provisions of prisoners • Legal Rights of prisoners • Constitutional provisions of prisoners Nelson Mandela rules for the treatment of prisoners	
Unit -4 Non institutionalized treatment for prisoners	**15**
Chapter -7 Community based corrections Probation: Concept, history and scope Parole: Concept, history and scope After care services Restitution and fine **Chapter-8** Miscellaneous Standard minimum rules for Non custodial measures(Tokyo rules) Role of NGOs in reformation and rehabilitation	

Text Books:

1. Edelston, C.D. & Wicks, R.I. (1977), An Introduction to Criminal Justice, McGraw Hill.
2. Krishna Mohan Mathur, (1994), Indian Police, Role and Challenges, Gyan Publishing House, New Delhi.
3. Bhattacharya S.K., (1986). Probation system in India, Manas Publications, New Delhi.
4. Brodie, S.R., (1976). Effectiveness of sentencing, Home office, London.
5. Paranjepe, N.V., (2002). Criminology and Penology, Central Law Publications, Allahabad.

JOURNAL REFERENCES

1. The Prison Journal-SAGE
2. International Journal of Prisoner Health
3. Journal Of Correctional Health Care

DIGITAL REFERENCES

1. http://kamarajcollege.ac.in/Department/Criminology/II%20Year/003%20Core%205%20-%20Penology%20&%20Correctional%20Administration%20-%20III%20Sem.pdf.
2. https://www.scribd.com/document/408782187/Notes-on-Correctional-Administration-2017.
3. https://www.academia.edu/34249101/Notes_on_Correctional_Administration .
4. https://bprd.nic.in/WriteReadData/userfiles/file/5261991522-Part%20I.pdf.

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

Content of Lab Practical Course DSC-4:

Credits: 02 Marks: 25+25=50

List of Field Based Practical's to be conducted

1. To visit and study the overview of Prison as a correctional institution
2. To visit and study the reformatory measures, training and rehabilitation process.
3. To visit and study various facilities provided in Prison
4. To visit and study the non-institutional treatment programmes
5. To visit and study the functions and powers of JJB and CWC
6. To visit and study the functions and powers of Probation
7. To visit and study the aftercare services and other NGOs working toward reformation, rehabilitation and resocialization of inmates.

Course Articulation Matrix - 221472

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	2	2	2	2	3	1	2	2	1	1	2
CO2	3	2	3	3	3	3	2	2	3	2	2	2
CO3	3	3	3	3	3	3	2	2	3	3	2	3
CO4	3	3	3	3	3	3	2	3	3	3	2	3
Weighted Average	3	2.5	2.75	2.75	2.75	3	1.75	2.25	2.75	2.25	1.75	2.5

THIRD YEAR SYLLABUS

Course Structure (NEP 2020)

Discipline Specific Course (DSC)

Criminology & Forensic science –V Sem											
DSC (5)	231572	Medical Jurisprudence and Toxicology	4	0	4:0:2 (6 credits)	20	20	60	2 ½ hrs.	150
DSC (5) Lab		**Lab Practical on**- Medico-legal Examination.	0	4		10	15	25	3 hrs.	
DSC (6)	231573	Juvenile Justice	4	0	4:0:2	20	20	60	2 ½ hrs.	150

DSC(6)Lab		Fieldwork/ Project/ Dissertation/ Internship	0	4	(6 credits)	10	15	25	3 hrs.	

Criminology & Forensic science –VI Sem										
DSC (7)	231672	Forensic Dactyloscopy and DNA Fingerprinting	4	0	4:0:2 (6credits)	20	20	60	2 ½ Hrs.	150
DSC (7) Lab		Examination of Fingerprints & Footprints	0	4		10	15	25	3 hrs.	
DSC (8)	231673	Corporate Crimes	4	0	4:0:2 (6credits)	20	20	60	2 ½ hrs.	150
DSC (8) Lab		Examination of Frauds and Corporate Crimes	0	4		10	15	25	3 hrs.	
INT	23INTCRI 01	Internship	2	0	2:0:0	50	50	-	-	50

DSC (5) Syllabus for B.A Criminology and Forensic Science

Semester V

Course Code: 231572	**Course Title**: **DSC (5)** Medical Jurisprudence and Toxicology **DSC (5) Lab-**Medico-legal Examination
Course Credits :06 (4:0:2)	**Hours of Teaching:** 60(Theory) 60(Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark**: 40 (Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Out comes (CO's):

CO1.Analyse the basics of Medical Jurisprudence and Toxicology
CO2. Demonstrate the medico-legal importance of Death.
CO3. Determine the effect of toxins on human body.
CO4. Familiarize oneself with autopsy and its significance.

Unit–1Medical Jurisprudence and Toxicology	**15**

Chapter- I Introduction to Jurisprudence

- Meaning and definition
- Legal And Ethical Aspects of Practice of Medicine
- The Indian Medical Council and State Medical Council: Formation, Functions
- Rights, Privileges and Duties of Registered Medical Practitioners.
- Infamous conduct, Professional secrecy and privileged communications, Medical Ethics and prohibition of Torture & care of Torture Victims
- Consent – Its relevance in Medical Practice & medical record maintenance.

Chapter – II Medical Jurisprudence

- Medical Negligence and contributory negligence, Precautionary measures and defenses for Medical Practitioners against legal actions, Medical/Doctors indemnity insurance, Consumer Protection Act relevant to medical practice.
- Euthanasia – Current views and dilemmas, Different codes of Medical Ethics and Ethics in Research.
- Common medico-legal problems in Hospital practice, Medico-legal, ethical & social problems in relation to AIDS.

Unit- II Introduction to forensic medicine	**15**

Chapter- 3 Meaning of forensic medicine

- Definition, Scope Relevant forensic medicine
- History of Forensic Medicine
- Need, Scope, Importance and probative value of medical evidence in Crime Investigation

Chapter- 4 Medico-Legal considerations of Injuries & Death

- Meaning & classification and Mechanism of production of Wounds and injuries, Medico-legal aspects
- Thanatology, death, its causes, stages of death, signs of death and changes following death
- Asphyxia and accidents

Death due to heat, cold, electrocution & Thermal

Unit-III Forensic Toxicology	**15**

Chapter – 5 Introduction to Toxicology

- Introduction to Toxicology
- Classification of Poisons
- General consideration and Laws in relation to poisons / Narcotic drugs and Psychotropic substances Act,
- Basics of Environmental and Industrial Toxicology in relation to Health & Ecology

Chapter- 6 Corrosive & Irritant Poisons:

- Inorganic Corrosives- Sulphuric, Nitric & Hydrochloric Acid
- Organic Corrosives- Phenol, Oxalic Acid
- Inorganic Non-Metallic Irritants- Phosphorus, Halogens
- Inorganic Metallic Irritants - Arsenic, Lead, Mercury, Copper
- Organic Vegetable Irritants - Abrus, Castor, Croton, Calotropis, Semi carpus, Ergot.
- Organic Animal Irritants – Snake Bite, Scorpion & other common insect bites diagnosis and Management; Medico legal Aspects

Unit-IV Major Poisons	**15**

Chapter -7 Neurotoxic

- Inebriates- Ethyl Alcohol, Methyl Alcohol
- Somniferous and Sedative Hypnotics – Opium and Derivatives, Barbiturates Deliriants Datura, Cannabis, Cocaine.
- Insecticides/ Pesticides/ Agrochemical- Organo-phosphorus Compounds. Organochlorides, Carbamates Pyrethroids, Aluminum phosphide.
- Spinal Poisons- Strychnine
- Peripheral Poisons- Curare

Chapter -8 Asphyxiants and Other Poisons

- ASPHYXIANTS (GASES)- Carbon monoxide, Carbon Dioxide, Cyanogen's and Cyanides
- CARDIAC POISONS- Oleanders, Aconite, Tobacco
- DOMESTIC/ HOUSEHOLD POISONS: Kerosene, Detergents, Disinfectants, Cosmetics, Rodenticide mothballs etc. .
- THERAPEUTIC DRUG TOXICITY/ POISONING BY MEDICINES- Salicylates, Paracetamol, Newer derivatives of sedative
- FOOD POISONING-Bacterial, Viral.

Text Books:

1. Andrew R.W. Jackson, Julie M Jackson, 2011, " Forensic Science", Pearson Education Limited.
2. B.S. Nabar, 2001, forensic science in Crime Investigation", Asia law House.
3. J C Upshaw Downs, Anjali Ranadive, Swienton , 2002, "Ethics in Forensic Science, Academic Press Publications.
4. Jay A Siegel, Kathey Mirakovits, 2013, " Forensic Science: The Basics", CRC press.
5. Jim Fraser, Robin Williams, 2013,"Hand book of Forensic Science", Routldge publications.
6. Max. M. Houck, Jay A Siegal,2010, "Fundamentals of Forensic Science" Academic Press.
7. Andrew R.W. Jackson, Julie M Jackson, 2011, " Forensic Science", Pearson Education Limited.
8. J C Upshaw Downs, Anjali Ranadive, Swienton, 2002, "Ethics in Forensic Science, Academic Press Publications.
9. Forensic Medicine & Toxicology – Krishna vij
10. Forensic Medicine & Toxicology – V V Pillay

Digital References:

- https://study.com/academy/lesson/physical-evidence-definition-types-law.html
- https://www.forensicpage.com/
- https://www.legalserviceindia.co m/legal/article-8572-types-and-significance-of-physicalevidence.html
- http://www.forensic-evidence.com/
- http://www.ncjrs.gov/App/AbstractDB/AbstractDBSearch.aspx

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

Content of Lab Practical Courses DSC- Credits:02

Marks: 25+25=50

List of practical to be conducted

1. Blood grouping
2. Preliminary Examination of Blood
3. Confirmatory test for blood
4. Medico-legal Aspects of Homicidal, Suicidal and Accidental.
5. Examination of human skeleton.
6. Identification of Sex and Age through Bone remains.
7. Examination of different wounds and Injuries.
8. Examination of hair
9. Morphology of hair
10. Examination and Comparison of Natural and Synthetic fibers

References

1 Andrew R.W. Jackson, Julie M Jackson, 2011, " Forensic Science", Pearson Education Limited.
2 B.S. Nabar , 2001, forensic science in Crime Investigation", Asia law House.
3 J C Upshaw Downs, Anjali Ranadive, Swienton, 2002, "Ethics in Forensic Science, Academic Press Publications.

Course Articulation Matrix -231572

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	3	1	1	-	2	1	2	1	1	1	2
CO2	2	2	2	3	1	1	1	2	1	2	1	2
CO3	3	2	2	2	1	-	2	1	1	2	1	2
CO4	2	3	2	3	2	1	1	2	1	1	1	2
Weighted Average	2.5	2.5	1.75	2.25	1	1	1.25	2	1	1.5	1	2

DSC (6) Syllabus for B.A Criminology and Forensic Science

Course Code:231573	**Course Title**: **DSC (6)** Juvenile Justice
Course Credits:06 (4:0:2)	**Hours of Teaching:**60 (Theory) 60 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark**: 40 (Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60(Theory) 25 (Practical)

Course outcomes (CO's):

CO1: Analyze the definition of juvenile delinquency and its brief history.
CO2: Explain the current situation of JD in India in comparison to developed countries.
CO3: Recognize the various deviancy theories.
CO4: Develop the knowledge regarding the relevant laws, institutions dealing with juvenile deviants

Content of Theory Course	60Hr
Unit- I Introduction to Juvenile Justice	**15**

Chapter- 1 Meaning and Definition

- Juvenile Justice.
- Deviance.
- International perspectives on juveniles (in developing countries).

Chapter 2 Rights of the Child.

- Basic rights – Child rights as human rights – United Nations Convention on the Rights of the Child (UNCRC)
- Legal protection for children – Fundamental rights as defined by the Constitution of India.
- National Commission for protection of child rights – State Commission for the protection of child rights.

Unit- II Theories of Juvenile Deviancy.	15

Chapter – 3 General Factors

- Economic Factors
- Social Factors
- Psychological Factors
- Genetic factors

Chapter- 4 Specific Factors.

- Street gangs and deviancy as a result of Differential Association.
- Social Disorganization, Broken Homes and Deviancy.
- Broken Window Theory of Deviancy.
- Impact of mass media on juveniles: Bandura and Imitation Theory,

Unit-III Laws Relating to Deviant Behavior of Juveniles.	15

Chapter – 5 History of Juvenile Justice Act.

- Early History of JJ in India up to 2015: Joint Family system and typical Varnashram beliefs and duty towards children.
- Juvenile Justice introduced by the British-on-British model at the provincial level in India.
- Apprenticeship Act, Reformatory Schools Act, Children Acts of 1920s and 1930s; Borstal Schools Acts, Central Children Act 1960, JJ Act 1986, JJ Act 2000, JJ Act 2015 (care and protection act).

Chapter- 6 Legal frameworks.

- Conceptual clarity on Legal frameworks (POCSO, ITPA, Child Labour Act, Information Technology Act, Child Marriage Act)
- Familiarization of various other laws relating to children in India.

Identifying appropriate practitioners/stakeholders (includes special educators, translators, interpreters, psychologists and psychiatrists).

Unit-IV Institutions in India for Children's.	15

Chapter -7 Institutions in India for Children in Conflict with Law (CICWL)

- Juvenile Justice Board (JJB): Composition of the Board – Powers, functions and responsibility.
- Procedure in relation to children in conflict with law – Special focus on Section 15 (Preliminary assessment in heinous offences).
- Powers of children's court – Observation homes – Special home – Borstal school – Special juvenile police unit – Managing the unrest of children in child care institutions – Managing deviant behaviour in juvenile justice institutions.

Chapter – 8 Institutions in India for Children in Need of Care and Protection (CINOCAP)

- Child Welfare Committee (CWC): Composition of the Committee, Powers, functions and responsibility.
- Procedure in relation to children in need of care and protection – Open shelter – Place of safety – Foster care – Children's/Shelter homes – Institutions' roles (public/private) – Adoption and sponsorship of children.

Chapter – 9 Juvenile Justice Process.

- Pre-trial, trial and sentencing – Probation – Juvenile deterrence practices – Rehabilitation and social re-integration – After care programs – Nature and role of diversion programs – Disposition process
- Social Investigation and Reporting and its impact on rehabilitation – Individua Care Plan (ICP) – Legal and ethical role, Communication skills and attitudes (move away from apathy to empathy) of Practitioners (Special Juvenile Police Unit) in pre-trial and during trial for timely disposition of cases and forensic investigations/interviewing
- Role of families/guardians (support persons) in the trial and post-trial process – Repatriation – Child friendly atmosphere to be initiated and implemented in courts (JJB and CWC) and police stations – Best practices (Local and International) – Do's and Don'ts.

Text Books:

1. 1 Krishna Pal Malik (2011) "Penology, Victimology, and Correctional Administration in India' Allahabad Law Agency, Hariyana
2. 2 Siegel J Larry (2006) "Criminology 9th Edition" Thomas Publications, USA.
3. 3 Johnson, H. M., (1960), 'Sociology: A Systematic Introduction', Allied Pub. New Delhi.
4. 4 Ashoka (2014) "Samagra Aparadha Vidhnyana" Sudha Publications, India.
5. 5 Amberley R. Buxton, Susan Rodger, Anne L. Cummings and Alan W. Leschied (2006). The change process in clients with high needs. Canadian Journal of Counseling.
6. 6 Johnson, H. M., (1960), 'Sociology: A Systematic Introduction', Allied Pub. New Delhi.
7. Youth offending and Restorative Justice – Tim Newburn

E-Resources:

•https://sg.inflibnet.ac.in/bitstream/10603/222579/4/04_chapter%201.pdf
•https://study.com/academy/lesson/what-is-juvenile-delinquency-definition-theories-facts.html 21/10/2019
•https://shodhgangotri.inflibnet.ac.in/handle/123456789/3412
•https://en.wikipedia.org/wiki/Child_abuse
•https://www.unicef.org/child-rights-convention/child-rights-why-they-matter
•
https://shodhganga.inflibnet.ac.in/bitstream/10603/66825/19/19_conclusion%20and%20suggestions.pdf

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

DSC (6) Syllabus for B.A Criminology and Forensic Science (Basic and Honors)

Course Code:231573	**Course Title**: **DSC (6)** FIELDWORK/ PROJECT/ DISSERTATION/ INTERNSHIP (Practical)
Course Credits :02(2:0:0)	**Hours of Teaching/ Week:**4
Total Contact Hours: 60 Hours	**Formative Assessment Mark** :25
Exam Duration3 Hours (Practical)	**Semester End Examination Marks: 25**

Practical Content

SUGGESTED TOPICS

1. Crime in urban and rural areas.
2. Railway crimes.
3. Study on violent crimes.
4. Prison administration.
5. Police administration.
6. Police training.
7. Police-Community relations
8. Police help-line.
9. Forest crimes.
10. Criminal personality tendencies- groups; tribes.
11. P.O. Act- released offenders on probation.
12. Prisoners Act- Released convicts.
13. Victims of Crime.
14. Communal violence.
15. Juveniles in conflict with law.
16. Child labor.
17. Drug abuse
18. Voluntary agencies.
19. Ragging.
20. Economic offences.
21. Cybercrimes.
22. Prostitution- sex workers.
23. Human Rights.
24. Female criminality.
25. Crimes against women.
26. Crimes against children.
27. Mass media and crime.
28. Case Studies.
29. Pornography.
30. Crimes against weaker sections.
31. Habitual Criminals
32. Consumer Protection.

Note: Fieldwork/ Project/ Dissertation/ Internship a student can choose any related topics pertaining to the field of Criminology & Forensic Science other than the mentioned above.

STUDY METHODOLOGY: The students are given an option to select one of the above-mentioned topics. During the allocated session, the topic will have to be studied and a specific methodology is to be followed;

1. Selection of the topic
2. Study the topic to evolve the statement of the problem
3. Literature survey
4. Methodology
5. Collection of data or information on the institution or case (depending upon the topic and method)
6. Analysis and interpretation of the data.
7. Findings and conclusions.

Each of the students will be assigned a study supervisor.
The pedagogy to be followed is to mentor the student, review progress and suggest corrections.
The student will have to attend the designated classes and the teacher assigned will conduct the contact session in relation to the research methods to his/her assigned students.
The designated classes for the field work will be mentioned in the college and department time table.
The contact sessions will be deemed to be a part of the practical workload of the designated teacher.
Finalization and submission of the report will have to take place at least one week before the scheduled university practical examination.
The report shall contain letters of permission from the institutions and endorsement thereof as to having visited the institution for collection of information.
The copies of the filled in questionnaires will have to be submitted in a separate file in case if the student has used the survey method.
The reports shall be evaluated at the term end examination, conducted by the University of Mysore.
The evaluation will also be based upon the viva-voce, in relation to the report.

Course Articulation Matrix –231573

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	1	-	1	1	1	1	2	2	1	1
CO2	2	2	1	1	1	2	2	1	2	2	1	2
CO3	2	2	2	3	1	1	1	2	1	2	2	2
CO4	1	3	3	3	3	2	2	2	3	3	3	2
Weighted Average	1.75	2.25	1.75	2.33	1.5	1.5	1.5	1.5	2	2.25	1.75	1.75

DSC (7) Syllabus for B.A Criminology and Forensic Science

Semester VI:

Course Code: 231672	**Course Title**: **DSC (7)** Forensic Dactyloscopy and DNA Fingerprinting (Theory) **DSC (7)** Examination of Fingerprints & Footprints (Practical)
Course Credits :06 (4:0:2)	**Hours of Teaching:**60 (Theory) 60 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark**: 40 (Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Recognizing the significance of DNA and the forensic dactyloscopy idea.
CO2: Educating oneself on the tenets and laws of individuality.
CO3: Gaining better knowledge on crimes, scams, and the methods used to investigate them in India.
CO4: In order to understand the forensic significance of forensic dactyloscopy and DNA in criminal justice systems

Content of Theory course	Hours

Unit-I: Introduction to Dactyloscopy	15

Chapter-1Meaningof Dactyloscopy

- Meaning and Scope; Print Science, Importance of Print Science,
- Morphology of Finger prints and Footprints, Embryogenesis.
- Basic Features and Principles of Fingerprints
- Historical Development of Print Science.
- Organization of State and Central Finger print Bureaus,
- DermatologicalformationandDiseasesinfluenceonthedamagesoffingerprints, Biometric unique ness, and Finger prints as Evidence.

Chapter-2Classification of Finger Prints Patterns

- Meaning and importance of classification of fingerprint patterns.
- Explaining various types of classification of Fingerprints;
- Henry classification and its examination,
- Secondary classification system,
- Subsecondaryclassificationnsystem,
- Secondary sub secondary classification system,
- Key classification
- Final classification and Single digit classification system
- Fingerprint Patterns: Fingerprint Peculiarities / Minutiae and Characteristic

Chapter-3 Significance of palm prints

- Significance of palmprints, ATD Angle, Shape, Size of Palms, Ridge Tracing, Biometric Minutiae.
- Poro scopy and Edgeoscopy, Characteristics of pores–size, position and latent print formation of pores.

Unit-II Development of Finger Prints.	15

Chapter–4 Development of Finger Prints

- Types of Chance Prints at Scene of Crime
- Location and preservation of chance print at scene of crime.

Chapter-5PhysicalMethodsforLatentFingerprintDevelopment

- Powder Methods: Regular: - Black powder and white powder. Metallic: Aluminum powder and Magnetic black powder. Fluorescent: Greene scent and pink scent fluorescent powders.
- Iodine Fuming& Cyanoacrylate.

Chapter-6ChemicalandPhotography Methods for Fingerprint Development

- Gentian Violet and Silver Nitrate Method.
- Ninhydrin Method etc.
- Recording of Latent Prints and Visible prints by Slanting Photograph.

Chapter-7 Biometric, Digital Imaging and Green Methods

- Forensic application of Biometrics, Biometric Impression on Scanner/Live Scans.
- Application of digital imaging process in Fingerprint science.

AFIS application in Finger Print Bureau, Application of Alternate light sources (ALS) in finger print detection

Unit-III Foot Prints	**15**

Chapter-8Developmentof Foot Prints

- Meaning, Types, Importance
- Tracing of surface footprints,
- Casting and lifting of surface and sub-sunken footprints
- Gait pattern analysis–
- Determination of Sex, Height, Age of a person

Gait pattern analysis

Unit-IV DNA Finger Prints	**15**

Chapter-9MeaningandImportanceof DNA profile

- Meaning of DNA Finger Prints and Scopes
- Importance of DNA profile
- Legal procedure for conducting DNA profile
- Circumstances of usage of DNA Profile

Chapter–10LegalprovisionsofDNAprofile.

- Source of DNA: Body Fluids, Hair, Skin Tissues and Nail etc.
- Role of DNA is Sexual offence cases

References

1 Andrew R.W.Jackson, Julie M Jackson, 2011, " Forensic Science", Pearson Education Limited.
3 J C Upshaw Downs, Anjali Ranadive, Swienton , 2002, "Ethics in Forensic Science, Academic Press Publications.
4 Jay A Siegel, KatheyMirakovits, 2013, " Forensic Science: The Basics", CRC press.
5 Jim Fraser, Robin Williams, 2013,"Hand book of Forensic Science", Routldge publications.
6 Max.M.Houck, Jay A Siegal,2010, "Fundamentals of Forensic Science" Academic Press.
7 Andrew R.W.Jackson, Julie M Jackson, 2011, " Forensic Science", Pearson Education Limited.
9 J C Upshaw Downs, Anjali Ranadive, Swienton, 2002, "Ethics in Forensic Science, Academic Press Publications.
11. Walls H. J. (2nd Ed. 2008), – Forensic Science: An Introduction to Scientific Crime Detection, Universal Law Publishing Co. Pvt. Ltd. New Delhi-33
12. Forensic Science in Criminal Investigation and Trials, B. R. Sharma
13. John Townsend, 2008, "Forensic Evidence: Prints", Crabtree Publishing House
14. Bumbrah, G. S.; Small particle reagent (SPR) method fordetection of latent fingermarks: A review. Egyptian Journal ofForensic Sciences 2016, 6, 328. [CrossRef]
15. Linda L Klepinger, 2006, "Fundamentals of Forensic Anthropolgy", John wiley and sons.

DigitalReference

https://www.britannica.com/topic/dactyloscopyhttps://forensicfield.blog/dactyloscopy/https://www.researchgate.net/publication/355065615_Fingerprint_Development_Techniques_A_Reviewhttps://www.wiley.com/en-us/Fingerprint+Development+Techniques:+Theory+and+Application-p9781119992615https://www.ijert.org/an-advanced-method-fingerprint-recognition-and-analysis-for-all-investigationindustrial-applicationshttps://www.taylorfrancis.com/chapters/mono/10.1201/9781420041347-7/methods-latentfingerprint-development-ashim-datta-henry-lee-robert-ramotowski-gaensslenhttps://www.sciencedirect.com/science/article/abs/pii/0031320395001069#:~:text=Fingerprints%20are%20classified%20into%20five,loop%2C%20right%20loop%20and%20whorl.https://www.cse.msu.edu/~cse802/Papers/802_FPClassification.pdf

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

PROCEEDING OF BOS

Department of Criminology and Forensic Science

Board of Studies Meeting (NEP) held on 12th September 2023.

AGENDA

- Framing, Consideration, Verification, Recommendation of **III, IV, V and VI Semester Syllabi** with OBE (NEP) for **UG CRIMINOLOGY AND FORENSIC SCIENCE COURSE** for the year 2023-24.
- Approval of Updated Gradation list of Board of Examiners for the academic year 2023-24.
- **OBE** Implemented.

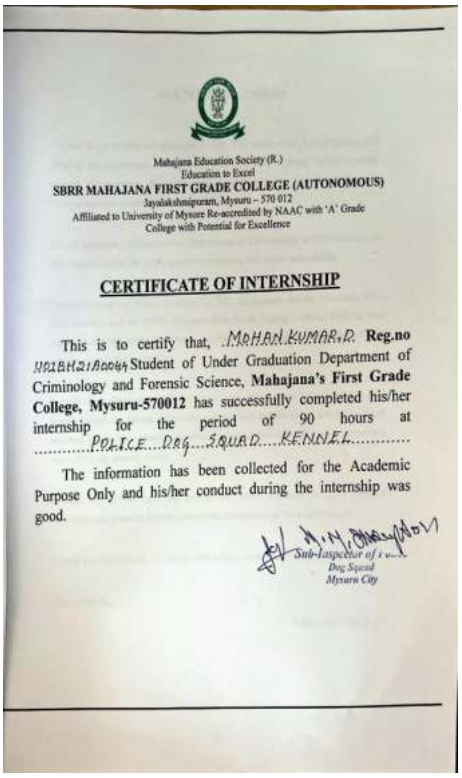
PROCEEDINGS

1. Discussed about the syllabi framing for **III, IV, V and VI Semester B.A (Criminology and forensic science-DSC)** as per NEP Regulations-2020. Preparation, Verification, Recommendation, Consideration, Approved and Implemented according to Regulations of BoS in **Criminology and forensic science,** UoM, Mysuru for the year 2023-24. **OBE Implemented** and Only contents of the chapters have been changed wherever required.
2. Approved Title of the papers, number of Credits, Pattern of Question Paper and Hours for DSC as per NEP Regulations-2020.
3. Because of some errors III & IV semester syllabus has been revised.
4. VI Semester syllabus has been modified
5. Approved scheme of evaluation pattern for both theory and practical.
6. Approved Updated Gradation list of **Board of Examiners** for the academic year 2023-24.

Chairperson-BOS

Chairperson
BOS/BOE in Criminology
& Forensic Science
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram Mysuru-570 012

INTERNSHIP CERTIFICATE



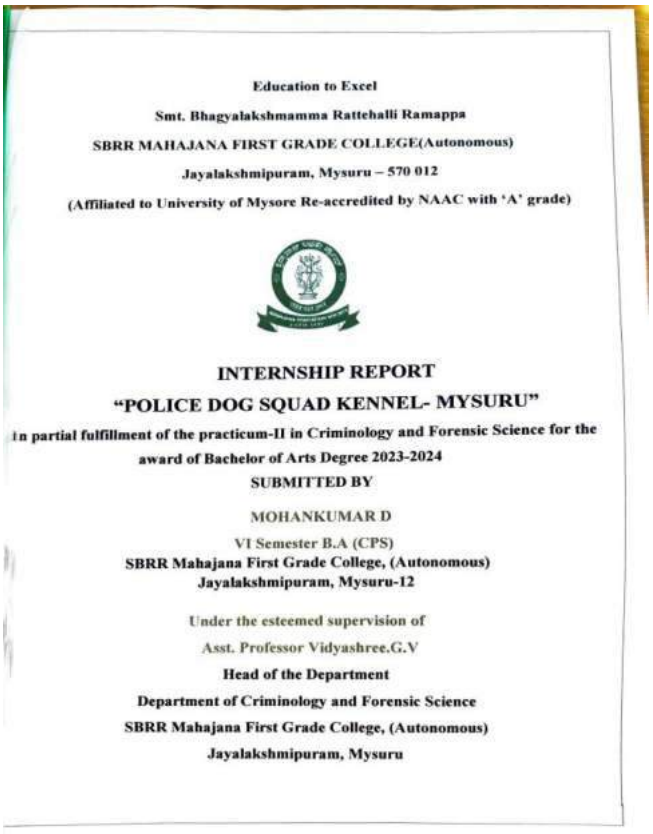
Mahajana Education Society (R.)
Education to Excel
SBRR MAHAJANA FIRST GRADE COLLEGE (AUTONOMOUS)
Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

CERTIFICATE OF INTERNSHIP

This is to certify that, MOHAN KUMAR.D **Reg.no** U01BHJ21AR044 Student of Under Graduation Department of Criminology and Forensic Science, **Mahajana's First Grade College, Mysuru-570012** has successfully completed his/her internship for the period of 90 hours at POLICE DOG SQUAD KENNEL

The information has been collected for the Academic Purpose Only and his/her conduct during the internship was good.

Sub-Inspector of Police
Dog Squad
Mysuru City



Education to Excel

Smt. Bhagyalakshmamma Rattehalli Ramappa

SBRR MAHAJANA FIRST GRADE COLLEGE(Autonomous)

Jayalakshmipuram, Mysuru – 570 012

(Affiliated to University of Mysore Re-accredited by NAAC with 'A' grade)

INTERNSHIP REPORT

"POLICE DOG SQUAD KENNEL- MYSURU"

In partial fulfillment of the practicum-II in Criminology and Forensic Science for the award of Bachelor of Arts Degree 2023-2024

SUBMITTED BY

MOHANKUMAR D

VI Semester B.A (CPS)
SBRR Mahajana First Grade College, (Autonomous)
Jayalakshmipuram, Mysuru-12

Under the esteemed supervision of

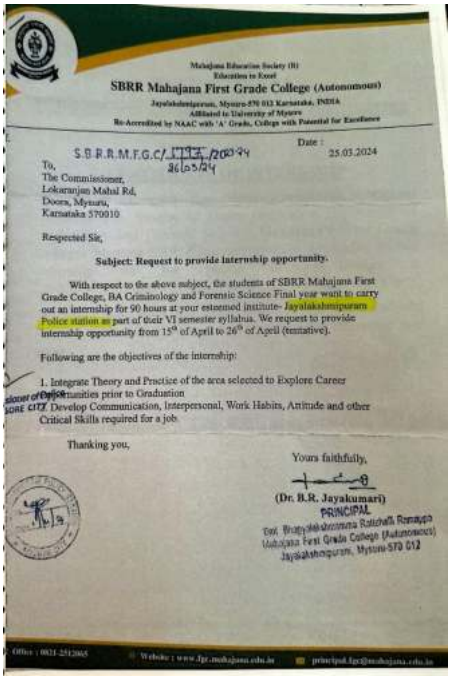
Asst. Professor Vidyashree.G.V

Head of the Department

Department of Criminology and Forensic Science

SBRR Mahajana First Grade College, (Autonomous)

Jayalakshmipuram, Mysuru



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S.B.R.R.M.F.G.C/ 1797 /2023-24
26/03/24

Date : 25.03.2024

To,
The Commissioner,
Lokaranjan Mahal Rd,
Doora, Mysuru,
Karnataka 570010

Respected Sir,

Subject: Request to provide internship opportunity.

With respect to the above subject, the students of SBRR Mahajana First Grade College, BA Criminology and Forensic Science Final year want to carry out an internship for 90 hours at your esteemed institute- Jayalakshmipuram Police station as part of their VI semester syllabus. We request to provide internship opportunity from 15th of April to 26th of April (tentative).

Following are the objectives of the internship:

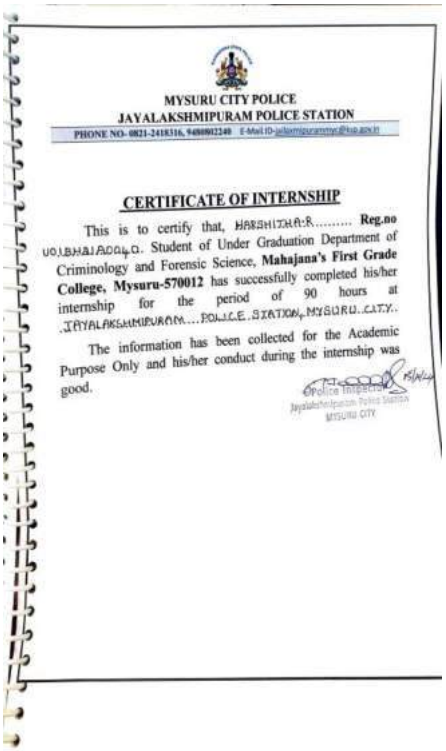
1. Integrate Theory and Practice of the area selected to Explore Career Opportunities prior to Graduation
2. Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job

Thanking you,

Yours faithfully,

(Dr. B.R. Jayakumari)
PRINCIPAL
Dr. Bhagyalakshmamma Ratchalli Ramappa
Mahajana First Grade College (Autonomous)
Jayalakshmipuram, Mysuru-570 012

Office : 0821-2512065 Website : www.fgc.mahajana.edu.in principal.fgc@mahajana.edu.in



MYSURU CITY POLICE
JAYALAKSHMIPURAM POLICE STATION
PHONE NO- 0821-2418316, 9480802240 E-Mail ID-jalaxmipurammyc@hsp.gov.in

CERTIFICATE OF INTERNSHIP

This is to certify that, HARSHITHA.R..... **Reg.no** U01BHA1A0040. Student of Under Graduation Department of Criminology and Forensic Science, **Mahajana's First Grade College, Mysuru-570012** has successfully completed his/her internship for the period of 90 hours at JAYALAKSHMIPURAM....POLICE STATION, MYSURU CITY.

The information has been collected for the Academic Purpose Only and his/her conduct during the internship was good.

15/4/24
Police Inspector
Jayalakshmipuram Police Station
MYSURU CITY

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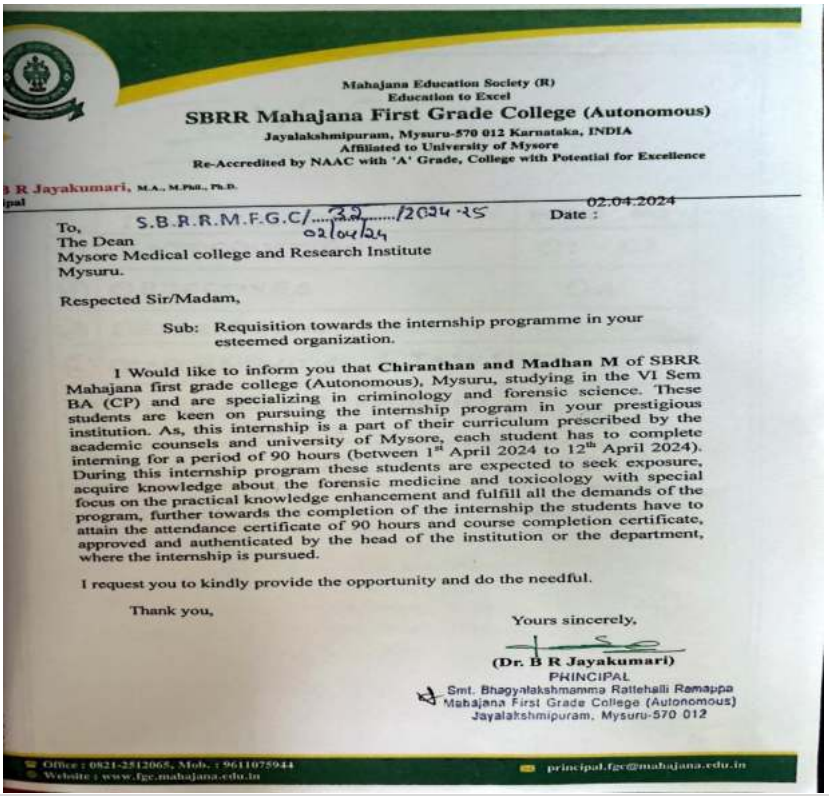
Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

CERTIFICATE OF INTERNSHIP

This is to certify that, MADHAN M **Reg.no** 201BH21A0022D Student of Under Graduation Department of Criminology and Forensic Science, **Mahajana's First Grade College, Mysuru-570012** has successfully completed his/her internship for the period of 90 hours at Mysore Medical College, Mysuru.

The information has been collected for the Academic Purpose Only and his/her conduct during the internship was good.

Head of the Department of
Criminology & Forensic Science
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, MYSURU-570 012



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Affiliated to University of Mysore
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

B R Jayakumari, M.A., M.Phil., Ph.D.
Principal

S.B.R.R.M.F.G.C/...32.../2024-25 Date : 02.04.2024
02/04/24

To,
The Dean
Mysore Medical college and Research Institute
Mysuru.

Respected Sir/Madam,

Sub: Requisition towards the internship programme in your esteemed organization.

I Would like to inform you that **Chiranthan and Madhan M** of SBRR Mahajana first grade college (Autonomous), Mysuru, studying in the VI Sem BA (CP) and are specializing in criminology and forensic science. These students are keen on pursuing the internship program in your prestigious institution. As, this internship is a part of their curriculum prescribed by the academic counsels and university of Mysore, each student has to complete interning for a period of 90 hours (between 1st April 2024 to 12th April 2024). During this internship program these students are expected to seek exposure, acquire knowledge about the forensic medicine and toxicology with special focus on the practical knowledge enhancement and fulfill all the demands of the program, further towards the completion of the internship the students have to attain the attendance certificate of 90 hours and course completion certificate, approved and authenticated by the head of the institution or the department, where the internship is pursued.

I request you to kindly provide the opportunity and do the needful.

Thank you,

Yours sincerely,

(Dr. B R Jayakumari)
PRINCIPAL
Smt. Bhagyalakshmamma Rattehalli Ramappa
Mahajana First Grade College (Autonomous)
Jayalakshmipuram, Mysuru-570 012

Office : 0821-2512065, Mob. : 9611075944
Website : www.fgc.mahajana.edu.in
principal.fgc@mahajana.edu.in

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Jayalakshmipuram, Mysuru – 570 012
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BOARD OF STUDIES (BoS)

DEPARTMENT OF CRIMINOLOGY AND FORENSIC SCIENCE

UG ☑

PG ☐

NEP Syllabi for IIIandIVSemester B.A

Criminology and Forensic Science

2022-23

Department of Criminology and Forensic Science

Motto:

Become great and vanquish all enemies

Vision:

To develop youth that are imbibed with moral, ethical, social, & constitutional values.
To also equip students with scientific concepts to vindicate law & combat crime.

Mission:

To impart knowledge based on the scientific principles so as to enable youth to understand crime in all its manifestations;
Device ways and means of controlling crime; and
Reformation and rehabilitation of the offenders by application of the knowledge derived from cognate branches of the study, for the benefit of the society.

ProgramOutcomes (POs) for Bachelor of Arts

PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Objectives: Criminology and Forensic science

1. Crime is one of the major social problems. It has posed a threat to social organization. To maintain peace, harmony and social order scientific approach to this problem is need of the hour. The problem of crime can be effectively tackled with the help of different agencies of Criminal Justice like Police, Prison, Law, Court and various other agencies. The study pertaining to different agencies of Criminal Justice is scientifically studied at the graduation level in Forensic Science and Criminology.

2. The students are exposed in this course on various aspects of Crime, Criminality, Reformation and Rehabilitation of Criminal, Victim of Crime, Victim Compensation, Victim Assistance and Restorative Justice to the parties concerned Victim of Crime, Criminal Law, Forensic Science, Forensic Medicine and Toxicology and other branches.

3. Objectives of the study of this science are to make the students to understand the process of making laws, breaking of the laws, societal reaction to breaking of the laws and modern crimes. To understand the application of science in the identification and analysis of physical clues found at the Crime Scene, Criminal and Victims.

4. To prepare the students to pursue their career in the State and Central Forensic Science Institutes, Law enforcement agencies and Judiciary. To pursue their career in Social Security and Voluntary Organizations and prevent the occurrence of Crime.

5. It is a professional course with emphasis on development of necessary skills for a Criminological profession in police, forensic science, private security management, private detective work, corrections, and Juvenile Institutions.

List of BoS Members

Sl. No	Category	Name & Designation	Address for Communication	E-Mail & Mobile No.
1	Chairperson	Miss. Vidyashree GV Assistant Professor & HOD	Dept of Criminology & forensic science SBRR Mahajana First Grade College (Autonomous), Mysuru.	vidyagv7878@gmail.com 9071036072
2	Member	Chandan Kumar K Assistant Professor	Dept of Criminology & forensic science SBRR Mahajana First Grade College (Autonomous), Mysuru.	chandankumaralbi@gmail.com 9742099365
3	University Nominee	Dr. G.B. Aravind Associate Professor	Dept. of Forensic Medicine, JSS Academy of Higher Education &Research, Mysore.	profaravind@gmail.com Mob.9886089317
4	Two Experts from other University	Prof. Basavaraj D Masthi Associate Professor & Head	Dept of Criminology & forensic science C. M. Managuli First Grade College, Sindagi	bdmasti@gmail.com Mob.91-9449644221
		Shashidhar. E. S Assistant Professor	Dept. of Forensic Science School Of Science. Jain (Deemed to be) University	es.shashidhar@jainuniversity.ac.in Mob. 91-9845673982
5	Member	Dr. Saritha D'souza Reader & Head	Dept of Criminology & forensic science School of Social Work, Roshni Nilaya, Valencia, Mangaluru	sarithavd@sswroshni.in Mob.91-9481014906
6	One person from industrial Expert	Dr. Krishnaraju K. K. Deputy Director	Regional Forensic Science Laboratory, Mysore	Mob.91- 9448500080
7	Alumnus	Francis Devasahayam. B Assistant Professor	Department of Criminology and Forensic science St. Philomena's college, Mysuru	francis91b@gmail.com Mob:9035304313

Course Structure (NEP 2020)

Discipline Specific Course (DSC)

II Year

Course type, code and Title		Hours/week		Credits	Maximum Marks			Exam Duration	Total Marks
		L	T/P	L: T: P	C1	C2	C3		
Criminology & Forensic science - III Sem									
DSC(3)	221372	Police science and criminal Investigation	4	0	4:0:2 (6 credits)	20	20	60	2 ½ hours	150
DSC(3) Lab		**Lab Practical on**- Police science and criminal Investigation	0	4		10	15	25	3 hours	
OE (3)	22OECRI301	**1.** Gender and Crime	3	0	3:0:0 (3 credits)	20	20	60	2 ½ hours	100
	22OECRI302	**2.** Crime scene Investigation								
	Anyone to be opted									
Criminology & Forensic science - IV Sem									
DSC (4)	221472	Correctional Administration	4	0	4:0:2 (6 credits)	20	20	60	2 ½ hours	150
DSC (4) Lab		**Lab Practical on**- Correctional Administration	0	4		10	15	25	3 hours	

DSC (3) Syllabus for B.A Criminology and Forensic Science (Basic and Honors)

Course Code: 221372	**Course Title**: DSC (3) Police Science and CriminalInvestigation (Theory) DSC (3) **Lab**-Police Science and Criminal Investigation
Course Credits :06 (4:0:2)	**Hours of Teaching/ Week:** 04 (Theory) 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark** :40 (Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:**60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Recognize the idea behind police science, its role in preventing crime, conducting investigations, and preserving a stable social order.

CO2: Gain expertise of maintaining law and order, enforcing national laws, and managing the police administration.

CO3: Being aware of the many difficulties that police officers encounter on a daily basis.

CO4: Determine many sorts of crime scenes, investigations, and the legal processes that surround them.

Content of Theorycourse	Hours
Unit – 1 Introductionto Police Science	**15**
Chapter-1 PoliceadministrationinIndia • Roleof PoliceinIndependentIndia, ConstitutionalprovisionsregardingpolicinginIndia • Police Organization of state Chapter-2Policingin presentscenario. • Introductiontovariousstylesof Policing • EthicsinPolicing • Technologyandpolicing • Shortcomingsof policing • Policerecruitment,trainingand PoliceReforms • Policingin presentscenario	

Unit – 2 Powers,Dutiesandchallengesof Police	**15**
Chapter-3 Powersandduties • Executivepowersanddutiesof policeofficersintheinvestigation • Policeaccountabilityin India:Courts, ExecutiveMagistrates,StateGovernment,Citizens/Community,Programmesforredressingpublicgrievances, PoliceComplaintsAuthorities Chapter-4Challengesinpolicing • Internalandexternalchallengesinpolicing • PoliceImage, PoliceCorruption, PoliceandHumanRights • Technologicalshortcomingsandpolicing	
Unit – 3 CriminalInvestigation	**15**
Chapter-5 Basicsof Investigation • Objectivesof CriminalInvestigation • Characteristicsandroleof InvestigatingofficerChapter-6LegalproceduresinInvestigation • Investigationproceduresintraditional,contemporaryandspecialcrimes • Registration ofFIR,chargesheet, recording of statements arrest confession summonsand warrants Execution	
Unit -4 CrimesceneInvestigation	**15**
Chapter -7 CrimesceneManagement • Responsibilitiesof Firstrespondingofficer. • Crimescene– Types,searchmethods,and Documentation.Chapter-8 PhysicalClues • Typesof physicalcluesand variouscrimescenes • Proceduresinlocating,handling,collecting,packingandforwarding of physicalclues, Chain of Custody	

Text Books:

1. Encyclopedia of Police in India. Gosh &Rustumji
2. Police &Political Order in India, P.D.Sharma
3. Indian Police Today, Shankar Sen
4. Inside India Police, Joginder Singh
5. SharmaB.R, 2007, ForensicScienceinCriminalInvestigationandTrialsUniversal LawPub.Co. Pvt.Ltd.
6. DouglasCruise(2002) TheBusinessof PrivateInvestigations, Texas:ThomasInvestigativePublications.
7. RamanujamT, 1992, PreventionandDetection of Crime,MadrasBook Agency
8. Nehad Ashraf, (1992), PoliceandPolicingin India,CommonWealth Publishers, NewDelhi

JOURNAL REFERENCES:

1. Internationaljournalof policescienceand management, SAGE
2. TheIndian PoliceJournal
3. TheJournalcriminalLaw, Criminology and PoliceScience, JSTOR ISSN-15476154

DIGITAL REFERENCES:

1. https://www.ojp.gov/pdffiles1/nij/228922.pdfhttps://www.researchgate.net/publication/340874515_Police_science_as_an_emerging_scientific_discipline.

Pedagogy: Lecture,Assignments,InteractiveSessions, ICT,GroupDiscussion

Contentof LabPracticalCourseDSC-3:
Credits: 02 Marks: 25+25=50

List of Experimentsto beconducted

1. Kim's Game
2. Procedureandprocessof filingcomplaintto thePoliceStation
3. Sceneof CrimeDocumentation:rough sketch, finalsketch, photographyandvideography
4. CrimeSceneInvestigation Methods(Murder, Burglary, TrafficAccidentetc.)
5. Methodsof Searching theSceneof Crime.
6. Reconstruction of Sceneof Crimeand reportwriting
7. Handling,packingandforwarding of physicalclues toexperts(Fingerprintson articles,Bloodstainson articles, hairandfibersamples,Bullets&CartridgeCases)
8. Crime Maps and analyze trends in criminal activity by using crime data from local police station
9. Research on cold cases and present findings.
10. Crime scene Photographic techniques.

Course Articulation Matrix - 221372

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	2	3	3	2	1	3	3	2	3	3
CO2	2	2	3	3	3	2	1	3	3	2	3	3
CO3	3	3	3	3	3	3	1	3	3	3	3	3
CO4	3	3	3	3	3	3	1	3	3	3	3	3
Weighted Average	2.5	2.5	2.75	3	3	2.5	1	3	3	2.5	3	3

OE (3) Syllabus for All Programs (Except B A)

Course Code:22OECRI301	**Course Title**: OE (3)**:**Gender and Crime (Theory)
Course Credits :03 (3:0:0)	**Hours of Teaching/ Week** 03 (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Mark** :40 (Theory)
Exam Duration: 2 ½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcomes (CO's):

CO1: Recognize the significance, character, and extent of crime and gender equality.

CO2: Elucidate the difficulties in explaining how gender affects crime from a criminological Perspective

CO3: Being aware of the numerous trends in gender-related crime and how to prevent it & outline the different gender-related crimes committed against minors.

Content of Theorycourse	Hours
Unit – 1 GenderEquality	**14**
Chapter-1GenderawarenessinCriminology • Genderandcrime:Meaning, natureandscope • GenderawarenessinCriminologyC hapter-2Gendergapincrime • Genderequality:Meaning,definition • Genderequalityand Crime • Cognitivecapacitiesandcrime • Situationalpressuresand gender	
Unit – 2 GenderspecificcrimesandCriminologicalstudies	**14**
Chapter-3 Criminologicaltheoriesof genderandcrimeChapter-4GenderinCriminal JusticeSystem • CrimesandCulturalViews • Legal system • Policepractice • Courttrials Chapter-5Patternsof Crime • Meaning,definitionandnature • Genderedpathwaysto offendingChapter-6WomenandCrime,MenandCrimes • Female patternsof offending • Risingfemalecriminality • Malepatternsof offending • Reason for male criminality	

Unit -3 Crimesagainst genderspecificchildren	**14**
Chapter-7Crimesagainstchildren • Meaning,Definition, NatureandScope • Harmfulcycleof gender-basedviolenceonchildren • Causesandimpactsof gender-based violenceagainstchildrenChapter-8 Typesof CrimesagainstChildren • Infanticidesandfeticides • Childtrafficking • Childpornography • Labourand streetoffences,etc • Variousproceduralrulesforprotection of children	

Text Books:

1.Fitz-Gibbon, K. &Walklate, S. (2018). Gender, CrimeandCriminalJustice,Routledge, ISBN:9781138656376
2.Mukharjee, S. K. &Scutt, J. A. (1981). WomenandCrime,Routledge, ISBN:9781138186569
3.Silvestri, M. &Crowther-Dowey, C. (2008).GenderandCrime(AKeyApproachtoCriminology), SAGEPublications
4.Britton, D. M. (2011). TheGender of Crime, Rowman &Littlefield
5.Evans, K&Jamieson, J. (2008). GenderandCrime:AReader,OpenUniversity Press

JOURNAL REFERENCES:

1. Child maltreatment-SAGE
2. Internationaljournalon childmal treatment-Springer
3. Womenand CriminalJustice – TaylorandFrancis
4. FeministCriminology-SAGE
5. ViolenceandGender

DIGITAL REFERENCES:

1. Gender-BasedViolence:AGlobalThreat|SavetheChildren
2. https://www.open.edu/openlearncreate/mod/oucontent/view.php?id=53771&printable=1
3. (PDF)GenderandCrime:Toward aGendered Theory of Female Offending (researchgate.net)
4. https://ijcst.journals.yorku.ca/index.php/ijcst/article/download/39737/35977
5. GenderandTheoriesof Delinquency- Oxford Handbooks

Pedagogy: Lecture,Assignments,InteractiveSessions, ICT,GroupDiscussion

Course Articulation Matrix-22OECRI301

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	2	-	-	2	1	1	1	1	2	2
CO2	2	2	3	2	2	3	1	2	2	2	2	2
CO3	3	3	3	2	3	3	2	2	2	2	3	2
Weighted Average	2.3	2.3	2.6	2	2.5	2.6	1.3	1.6	1.6	1.6	2.3	2

OE (3) Syllabus for All Programs (Except B A)

Course Code:22OECRI302	**Course Title**: OE (3):Crime Scene Investigation (Theory)
Course Credits :03 (3:0:0)	**Hours of Teaching/ Week:** 03 (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Mark** :40 (Theory)
Exam Duration: 2 ½ Hours (Theory)	**Semester End Examination Marks:**60 (Theory)

Course Outcome (CO's):

CO1: Be familiar with the techniques for securing, searching, and recording crime scenes.

CO2:Able to perform the skill of gathering, protecting, and packing various kinds of physical and traceevidence at crime scenes.

CO3: Explain the significance of chain of custody in legal terms, recognize the methods and equipment used in the analysis of various types of evidence found at crime scenes.

Content of Theorycourse	Hours
Unit – 1 CrimeScenePreliminaries	**14**
Chapter-1 CrimeSceneanditsimportance. • Meaningand Typesof crime scenes • indoorandoutdoor Mobile • primarysecondaryandtertiary. Chapter-2Securingandisolatingthecrimescene. • Crimescenesearch methods. • Safetymeasuresatcrimescenes. • Legalconsiderationsatcrimescenes.	
Unit – 2 CrimeSceneDocumentation	**14**
Chapter-3CrimeSceneDocumentationanditsimportance • Typesof documentation of crimescenes • Photography. • Videography, • Sketchingand • Recording notes. Chapter-4 Dutiesof firstrespondersatcrimescenes. • Coordinationbetween policepersonneland forensicscientists atcrime scenes. • Theevaluation of 5Ws(who?what?when?where? why?) and1H(how?).	
Unit -3CrimeSceneEvidenceManagement.	**14**

Chapter-5Classificationofcrimesceneevidence • Locard principle andImportance. • Physical evidenceand • Traceevidence. Chapter-6Collection,labelling,sealingof evidence. • Hazardousevidence. • Preservation of evidence.	

Text Books:

1. M. Byrd, CrimeSceneEvidence: AGuide totheRecovery andCollection of PhysicalEvidence, CRC Press, BocaRaton (2001).
2. T.J.GardenerandT.M. Anderson, CriminalEvidence,4thEd., Wadsworth, Belmont(2001).
3. S.H. Jamesand J.J. Nordby, ForensicScience: An IntroductiontoScientificandInvestigativeTechniques, 2nd Edition, CRC Press, BocaRaton (2005).
4. W.J.Tilstone,M.L.Hastrupand C. Hald,Fisher's,Techniquesof CrimeSceneInvestigation,CRC Press, BocaRaton (2013).

Pedagogy: Lecture,Assignments,InteractiveSessions, ICT,GroupDiscussion

Course Articulation Matrix-22OECRI302

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	3	2	3	3	2	1	2	3	1	3	2
CO2	3	3	3	3	3	2	2	2	3	2	3	3
CO3	3	3	3	3	3	2	2	2	3	2	3	3
Weighted Average	2.6	3	2.6	3	3	2	1.6	2	3	1.6	3	2.6

DSC (4) Syllabus for B.A Criminology and Forensic Science

Course Code: 221472	**Course Title**: DSC(4):Correctional Administration (Theory) DSC (4): **Lab**-Correctional Administration
Course Credits :06 (4:0:2)	**Hours of Teaching/ Week:** 04 (Theory) 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark** :40 (Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Outcomes (CO's):

CO1: The importance, nature, and application of criminology and the criminal justice system.

CO2: Outline the ideas and different forms of punishments used in India and other countries in the past and now.

CO3: Explaining the jail as a correctional facility, its varieties the laws that govern it.

CO4: Being aware of the principles underlying alternatives to institutional care for prisoners.

Content of Theorycourse	Hours
Unit – 1 Introductionto CorrectionalAdministration	**15**
Chapter-1 Penology and correctional administration • Penology – Definition, nature and scope • Correction – Definition, nature and scope • Types of punishment. • Similarities and Differences between punishment and correction **Chapter-2**Theoriesof Punishment Deterrencetheory Retributivetheory Preventivetheory Reformationtheory	
Unit – 2 Prisonsystem	**15**
Chapter-3 Prison andprisonorganization • Historicaldevelopmentof prison system. • Objectivesof Imprisonment • Typesof prisonsandcorrectionalinstitutionsin India. • Modernization of PrisonsinIndia;Reformation&Rehabilitationapproachin Prisons. **Chapter-4** Prison reformsin India • Historyandevolution of prisonlegislationsinIndia. • Recommendation of differentcommitteeson reformationsystem. • Prison act andprisonmanual	
Unit – 3 InstitutionalizedTreatment	**15**
Chapter-5 CorrectionsthroughInstitutionalizedtreatment • Meaningand purpose • Typesof institutions:Adult, women andchildren • Facilitiesprovided in institutions. • Remission,temporaryreleaseand prematurerelease**Chapter-6**Legalprovisionsof prisoners • Legal Rightsof prisoners • Constitutionalprovisionsof prisoners NelsonMandelarulesfor thetreatmentof prisoners	
Unit -4 Noninstitutionalizedtreatment forprisoners	**15**
Chapter -7 Community based corrections Probation:Concept,historyandscope Parole:Concept,historyandscope Aftercareservices Restitutionand fine**Chapter-8**Miscellaneous Standardminimumrulesfor Noncustodialmeasures(Tokyorules) Roleof NGOsinreformationandrehabilitation	

Text Books:

1. Edelston, C.D. &Wicks, R.I. (1977), An Introduction toCriminalJustice,McGrawHill.
2. KrishnaMohanMathur, (1994), IndianPolice,RoleandChallenges,GyanPublishing House,NewDelhi.
3. BhattacharyaS.K., (1986). Probation systemin India, ManasPublications,NewDelhi.
4. Brodie, S.R., (1976). Effectivenessof sentencing,Homeoffice, London.
5. Paranjepe, N.V., (2002). Criminologyand Penology,CentralLawPublications,Allahabad.

JOURNAL REFERENCES

1. ThePrison Journal-SAGE
2. InternationalJournalof PrisonerHealth
3. JournalOf CorrectionalHealthCare

DIGITAL REFERENCES

1. http://kamarajcollege.ac.in/Department/Criminology/II%20Year/003%20Core%205%20-%20Penology%20&%20Correctional%20Administration%20-%20III%20Sem.pdf.
2. https://www.scribd.com/document/408782187/Notes-on-Correctional-Administration-2017.
3. https://www.academia.edu/34249101/Notes_on_Correctional_Administration.
4. https://bprd.nic.in/WriteReadData/userfiles/file/5261991522-Part%20I.pdf.

Pedagogy: Lecture,Assignments,InteractiveSessions, ICT,GroupDiscussion

ContentofLab PracticalCourseDSC-4:

Credits: 02 Marks:25+25=50

List of FieldBasedPractical'sto beconducted

1. Tovisitandstudytheoverviewof Prison asacorrectionalinstitution
2. Tovisitandstudythereformatorymeasures,trainingandrehabilitation process.
3. Tovisitandstudy variousfacilitiesprovided in Prison
4. Tovisitandstudythenon-institutionaltreatmentprogrammes
5. Tovisitandstudythefunctionsandpowersof JJB andCWC
6. Tovisitandstudythefunctionsandpowersof Probation
7. Tovisitandstudythe aftercareservicesandother NGOsworkingtowardreformation,rehabilitationandresocialization of inmates.

Course Articulation Matrix - 221472

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	2	2	2	2	3	1	2	2	1	1	2
CO2	3	2	3	3	3	3	2	2	3	2	2	2
CO3	3	3	3	3	3	3	2	2	3	3	2	3
CO4	3	3	3	3	3	3	2	3	3	3	2	3
Weighted Average	3	2.5	2.75	2.75	2.75	3	1.75	2.25	2.75	2.25	1.75	2.5

Continuous Formative Evaluation/Internal Assessment(DSC)

Total marks for each course shall be based on continuous assessments and semester end Examination. The patterns is 40:60 for IA and Semester End theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

Theory		Practical
Total Marks	100 Marks	50 Marks
Continuous Assessment-1(C1)	20 Marks	10 Marks
Continuous Assessment-2(C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks Shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the courses and within 45 working days of semester program

b)The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c)During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d)In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/ assignment /project work etc.

The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course Shall be as under:

	C1Marks	C2 Marks	Total Marks
Session Test	10 Marks	10 Marks	20 Marks
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	10 Marks	10 Marks	20 Marks
Total	20 Marks	20 Marks	40 Marks

For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the ratio is 25 (10 + 15):25).

Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.

The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.

There shall be no minimum in respect of internal assessment marks.

Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations-V&VI Semester

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3hours. The student will be evaluated on the basis of Procedure development and its execution. The student has to compulsorily submit the practical record forEvaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

  Part-A Practical Exercises (C1): 10 marks

  Part-B Practical Exercises (C2): 10 marks + Record: 05 marks = 15 marks

- The student is evaluated for 25 marks in C3 as per the following scheme:

Assessment Criteria	**Marks**
Any Three Questions Decided by the External Examiner	10+10+05
Total	25

DSC Theory Question Paper Pattern
For III & VI Semester

Max Marks: 60 Times:2 ½ Hours

Instruction: Paper setting

- The Question Paper is divided into 3 parts: Part-A, Part-B and Part-C
- Part-A, Part-B, Part-C With Internal Choice.(Short, Medium and Long answer question)
- Part-A Each Question Carries 2 Marks and student has to answer 5 out of 7questions.
- Part-B Each Question Carries 5 Marks and student has to answer 4 out of 8 questions.
- Part-C Each Question Carries 10 Marks and student has to answer 3 out of 5 questions.

Part-A

I Answers any FIVE questions of the following in about 50 words 5x2=10

a.
b.
c.
d.
e.
f.
g.

Part- B

II. Answer any FOUR questions of the following in about 300 words 4x5=20

2.
3.
4.
5.
6.
7.
8.
9.

Part-C

III. Answer any THREE questions of the following in about 500 words 3x10=30

10.
11.
12.
13.
14.

OETheory Question Paper Pattern
For III Semester

Max Marks: 60 Times:2 ½ Hours

Instructions: Paper Setting

- The Question Paper is divided into 3 parts: Part-A, Part-B and Part-C
- Part-A, Part-B, Part-C With Internal Choice(Short, Medium and Long answer question)
- Part-A Each Question Carries 2 Marks and student has to answer 5 out of 7questions.
- Part-B Each Question Carries 5 Marks and student has to answer 4 out of 8 questions.
- Part-C Each Question Carries 10 Marks and student has to answer 3 out of 5 questions.

Part-A

I. 1. Answers any FIVE questions of the following in about 50 words 5x2=10

a.
b.
c.
d.
e.
f.
g.

Part- B

II. Answer any FOUR questions of the following in about 300 words 4x5=20

2.
3.
4.
5.
6.
7.
8.
9.

Part-C

III. Answer any THREE questions of the following in about 500 words 3x10=30

10.
11.
12.
13.
14.

Mahajana Education Society (R.)
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BOARD OF STUDIES (BoS)

DEPARTMENT OF CRIMINOLOGY AND FORENSIC SCIENCE

UG ☑

PG ☐

NEP Syllabi for V and VI Semester B.A

Criminology and Forensic Science

2023-24

Department of Criminology and Forensic Science

Motto:

Become great and vanquish all enemies

Vision:

To develop youth that are imbibed with moral, ethical, social, & constitutional values.
To also equip students with scientific concepts to vindicate law & combat crime.

Mission:

To impart knowledge based on the scientific principles so as to enable youth to understand crime in all its manifestations;
Device ways and means of controlling crime; and
Reformation and rehabilitation of the offenders by application of the knowledge derived from cognate branches of the study, for the benefit of the society.

Program Outcomes (POs) for Bachelor of Arts

PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Objectives: Criminology and Forensic science

1. Crime is one of the major social problems. It has posed a threat to social organization. To maintain peace, harmony and social order scientific approach to this problem is need of the hour. The problem of crime can be effectively tackled with the help of different agencies of Criminal Justice like Police, Prison, Law, Court and various other agencies. The study pertaining to different agencies of Criminal Justice is scientifically studied at the graduation level in Forensic Science and Criminology.

2. The students are exposed in this course on various aspects of Crime, Criminality, Reformation and Rehabilitation of Criminal, Victim of Crime, Victim Compensation, Victim Assistance and Restorative Justice to the parties concerned Victim of Crime, Criminal Law, Forensic Science, Forensic Medicine and Toxicology and other branches.

3. Objectives of the study of this science are to make the students to understand the process of making laws, breaking of the laws, societal reaction to breaking of the laws and modern crimes. To understand the application of science in the identification and analysis of physical clues found at the Crime Scene, Criminal and Victims.

4. To prepare the students to pursue their career in the State and Central Forensic Science Institutes, Law enforcement agencies and Judiciary. To pursue their career in Social Security and Voluntary Organizations and prevent the occurrence of Crime.

5. It is a professional course with emphasis on development of necessary skills for a Criminological profession in police, forensic science, private security management, private detective work, corrections, and Juvenile Institutions.

List of BoS Members

Sl. No	Category	Name & Designation	Address for Communication	E-Mail & Mobile No.
1	Chairperson	Miss. Vidyashree GV Assistant Professor & HOD	Dept of Criminology & Forensic Science SBRR Mahajana First Grade College (Autonomous), Mysuru.	vidyagv7878@gmail.com 9071036072
2	Member	Chandan Kumar K Assistant Professor	Dept of Criminology & Forensic Science SBRR Mahajana First Grade College (Autonomous), Mysuru.	chandankumaralbi@gmail.com 9742099365
3	University Nominee	Dr. G.B. Aravind Associate Professor	Dept. of Forensic Medicine, JSS Academy of Higher Education &Research, Mysore.	profaravind@gmail.com Mob.9886089317
4	Two Experts from other University	Prof. Basavaraj D Masthi Associate Professor & Head	Dept of Criminology & forensic science C. M. Managuli First Grade College, Sindagi	bdmasti@gmail.com Mob.91-9449644221
		Shashidhar. E. S Assistant Professor	Dept. of Forensic Science School Of Science. Jain (Deemed to be) University	es.shashidhar@jainuniversity.ac.in Mob. 91-9845673982
5	Member	Dr. Saritha D'souza Reader & Head	Dept of Criminology & forensic science School of Social Work, Roshni Nilaya, Valencia, Mangaluru	sarithavd@sswroshni.in Mob.91-9481014906
6	One person from industrial Expert	Dr. Krishnaraju K. K. Deputy Director	Regional Forensic Science Laboratory, Mysore	Mob.91-9448500080
7	Alumnus	Francis Devasahayam. B Assistant Professor	Department of Criminology and Forensic science St. Philomena's college, Mysuru	francis91b@gmail.com Mob:9035304313

Course Structure (NEP 2020)

Discipline Specific Course (DSC)

Criminology & Forensic science –V Sem

DSC (5)	231572	Medical Jurisprudence and Toxicology	4	0	4:0:2 (6 credits)	20	20	60	2 ½ hrs.	150
DSC (5) Lab		**Lab Practical on-** Medico-legal Examination.	0	4		10	15	25	3 hrs.	
DSC (6)	231573	Juvenile Justice	4	0	4:0:2 (6 credits)	20	20	60	2 ½ hrs.	150
DSC(6)Lab		Fieldwork/ Project/ Dissertation/ Internship	0	4		10	15	25	3 hrs.	

Criminology & Forensic science –VI Sem

DSC (7)	231672	Forensic Dactyloscopy and DNA Fingerprinting	4	0	4:0:2 (6credits)	20	20	60	2 ½ Hrs.	150
DSC (7) Lab		Examination of Fingerprints & Footprints	0	4		10	15	25	3 hrs.	
DSC (8)	231673	Corporate Crimes	4	0	4:0:2 (6credits)	20	20	60	2 ½ hrs.	150
DSC (8) Lab		Examination of Frauds and Corporate Crimes	0	4		10	15	25	3 hrs.	
INT	23INTCRI01	Internship	2	0	2:0:0	50	50	-	-	50

DSC (5) Syllabus for B.A Criminology and Forensic Science

Semester V

Course Code: 231572	**Course Title**: **DSC (5)** Medical Jurisprudence and Toxicology **DSC (5) Lab-**Medico-legal Examination
Course Credits :06 (4:0:2)	**Hours of Teaching:** 60(Theory) 60(Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark**: 40 (Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Out comes (CO's):

CO1.Analyse the basics of Medical Jurisprudence and Toxicology
CO2. Demonstrate the medico-legal importance of Death.
CO3. Determine the effect of toxins on human body.
CO4. Familiarize oneself with autopsy and its significance.

Unit–1 **Medical Jurisprudence and Toxicology**	**15**

Chapter- I Introduction to Jurisprudence

- Meaning and definition
- Legal And Ethical Aspects of Practice of Medicine
- The Indian Medical Council and State Medical Council: Formation, Functions
- Rights, Privileges and Duties of Registered Medical Practitioners.
- Infamous conduct, Professional secrecy and privileged communications, Medical Ethics and prohibition of Torture & care of Torture Victims
- Consent – Its relevance in Medical Practice & medical record maintenance.

Chapter – II Medical Jurisprudence

- Medical Negligence and contributory negligence, Precautionary measures and defenses for Medical Practitioners against legal actions, Medical/Doctors indemnity insurance, Consumer Protection Act relevant to medical practice.
- Euthanasia – Current views and dilemmas, Different codes of Medical Ethics and Ethics in Research.
- Common medico-legal problems in Hospital practice, Medico-legal, ethical & social problems in relation to AIDS.

Unit- II Introduction to forensic medicine	15

Chapter- 3 Meaning of forensic medicine

- Definition, Scope Relevant forensic medicine
- History of Forensic Medicine
- Need, Scope, Importance and probative value of medical evidence in Crime Investigation

Chapter- 4 Medico-Legal considerations of Injuries & Death

- Meaning & classification and Mechanism of production of Wounds and injuries, Medico-legal aspects
- Thanatology, death, its causes, stages of death, signs of death and changes following death
- Asphyxia and accidents

Death due to heat, cold, electrocution & Thermal

Unit-III Forensic Toxicology	15

Chapter – 5 Introduction to Toxicology

- Introduction to Toxicology
- Classification of Poisons
- General consideration and Laws in relation to poisons / Narcotic drugs and Psychotropic substances Act,
- Basics of Environmental and Industrial Toxicology in relation to Health & Ecology

Chapter- 6 Corrosive & Irritant Poisons:

- Inorganic Corrosives- Sulphuric, Nitric & Hydrochloric Acid
- Organic Corrosives- Phenol, Oxalic Acid
- Inorganic Non-Metallic Irritants- Phosphorus, Halogens
- Inorganic Metallic Irritants - Arsenic, Lead, Mercury, Copper
- Organic Vegetable Irritants - Abrus, Castor, Croton, Calotropis, Semi carpus, Ergot.
- Organic Animal Irritants – Snake Bite, Scorpion & other common insect bites diagnosis and Management; Medico legal Aspects

Unit-IV Major Poisons	15

Chapter -7 Neurotoxic

- Inebriates- Ethyl Alcohol, Methyl Alcohol
- Somniferous and Sedative Hypnotics – Opium and Derivatives, Barbiturates Deliriants Datura, Cannabis, Cocaine.
- Insecticides/ Pesticides/ Agrochemical- Organo-phosphorus Compounds. Organochlorides, Carbamates Pyrethroids, Aluminum phosphide.
- Spinal Poisons- Strychnine
- Peripheral Poisons- Curare

Chapter -8 Asphyxiants and Other Poisons

- ASPHYXIANTS (GASES)- Carbon monoxide, Carbon Dioxide, Cyanogen's and Cyanides
- CARDIAC POISONS- Oleanders, Aconite, Tobacco
- DOMESTIC/ HOUSEHOLD POISONS: Kerosene, Detergents, Disinfectants, Cosmetics, Rodenticide mothballs etc. .
- THERAPEUTIC DRUG TOXICITY/ POISONING BY MEDICINES- Salicylates, Paracetamol, Newer derivatives of sedative
- FOOD POISONING-Bacterial, Viral.

Text Books:

1. Andrew R.W. Jackson, Julie M Jackson, 2011, " Forensic Science", Pearson Education Limited.
2. B.S. Nabar, 2001, forensic science in Crime Investigation", Asia law House.
3. J C Upshaw Downs, Anjali Ranadive, Swienton , 2002, "Ethics in Forensic Science, Academic Press Publications.
4. Jay A Siegel, Kathey Mirakovits, 2013, " Forensic Science: The Basics", CRC press.
5. Jim Fraser, Robin Williams, 2013,"Hand book of Forensic Science", Routldge publications.
6. Max. M. Houck, Jay A Siegal,2010, "Fundamentals of Forensic Science" Academic Press.
7. Andrew R.W. Jackson, Julie M Jackson, 2011, " Forensic Science", Pearson Education Limited.
8. J C Upshaw Downs, Anjali Ranadive, Swienton, 2002, "Ethics in Forensic Science, Academic Press Publications.
9. Forensic Medicine & Toxicology – Krishna vij
10. Forensic Medicine & Toxicology – V V Pillay

Digital References:

- https://study.com/academy/lesson/physical-evidence-definition-types-law.html
- https://www.forensicpage.com/
- https://www.legalserviceindia.co m/legal/article-8572-types-and-significance-of-physicalevidence.html
- http://www.forensic-evidence.com/
- http://www.ncjrs.gov/App/AbstractDB/AbstractDBSearch.aspx

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

Content of Lab Practical Courses DSC- Credits:02

Marks: 25+25=50

List of practical to be conducted

1. Blood grouping
2. Preliminary Examination of Blood
3. Confirmatory test for blood
4. Medico-legal Aspects of Homicidal, Suicidal and Accidental.
5. Examination of human skeleton.
6. Identification of Sex and Age through Bone remains.
7. Examination of different wounds and Injuries.
8. Examination of hair
9. Morphology of hair
10. Examination and Comparison of Natural and Synthetic fibers

References

1 Andrew R.W. Jackson, Julie M Jackson, 2011, " Forensic Science", Pearson Education Limited.
2 B.S. Nabar , 2001, forensic science in Crime Investigation", Asia law House.
3 J C Upshaw Downs, Anjali Ranadive, Swienton, 2002, "Ethics in Forensic Science, Academic Press Publications.

Course Articulation Matrix -231572

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	3	1	1	-	2	1	2	1	1	1	2
CO2	2	2	2	3	1	1	1	2	1	2	1	2
CO3	3	2	2	2	1	-	2	1	1	2	1	2
CO4	2	3	2	3	2	1	1	2	1	1	1	2
Weighted Average	2.5	2.5	1.75	2.25	1	1	1.25	2	1	1.5	1	2

DSC (6) Syllabus for B.A Criminology and Forensic Science

Course Code:231573	**Course Title**: **DSC (6)** Juvenile Justice
Course Credits:06 (4:0:2)	**Hours of Teaching:**60 (Theory) 60 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark**: 40 (Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60(Theory) 25 (Practical)

Course outcomes (CO's):

CO1: Analyze the definition of juvenile delinquency and its brief history.
CO2: Explain the current situation of JD in India in comparison to developed countries.
CO3: Recognize the various deviancy theories.
CO4: Develop the knowledge regarding the relevant laws, institutions dealing with juvenile deviants

Content of Theory Course	60Hr
Unit- I Introduction to Juvenile Justice	**15**

Chapter- 1 Meaning and Definition

- Juvenile Justice.
- Deviance.
- International perspectives on juveniles (in developing countries).

Chapter 2 Rights of the Child.

- Basic rights – Child rights as human rights – United Nations Convention on the Rights of the Child (UNCRC)
- Legal protection for children – Fundamental rights as defined by the Constitution of India.
- National Commission for protection of child rights – State Commission for the protection of child rights.

Unit- II Theories of Juvenile Deviancy.	15

Chapter – 3 General Factors

- Economic Factors
- Social Factors
- Psychological Factors
- Genetic factors

Chapter- 4 Specific Factors.

- Street gangs and deviancy as a result of Differential Association.
- Social Disorganization, Broken Homes and Deviancy.
- Broken Window Theory of Deviancy.
- Impact of mass media on juveniles: Bandura and Imitation Theory,

Unit-III Laws Relating to Deviant Behavior of Juveniles.	15

Chapter – 5 History of Juvenile Justice Act.

- Early History of JJ in India up to 2015: Joint Family system and typical Varnashram beliefs and duty towards children.
- Juvenile Justice introduced by the British-on-British model at the provincial level in India.
- Apprenticeship Act, Reformatory Schools Act, Children Acts of 1920s and 1930s; Borstal Schools Acts, Central Children Act 1960, JJ Act 1986, JJ Act 2000, JJ Act 2015 (care and protection act).

Chapter- 6 Legal frameworks.

- Conceptual clarity on Legal frameworks (POCSO, ITPA, Child Labour Act, Information Technology Act, Child Marriage Act)
- Familiarization of various other laws relating to children in India.

Identifying appropriate practitioners/stakeholders (includes special educators, translators, interpreters, psychologists and psychiatrists).

Unit-IV Institutions in India for Children's.	15

Chapter -7 Institutions in India for Children in Conflict with Law (CICWL)

- Juvenile Justice Board (JJB): Composition of the Board – Powers, functions and responsibility.
- Procedure in relation to children in conflict with law – Special focus on Section 15 (Preliminary assessment in heinous offences).
- Powers of children's court – Observation homes – Special home – Borstal school – Special juvenile police unit – Managing the unrest of children in child care institutions – Managing deviant behaviour in juvenile justice institutions.

Chapter – 8 Institutions in India for Children in Need of Care and Protection (CINOCAP)

- Child Welfare Committee (CWC): Composition of the Committee, Powers, functions and responsibility.
- Procedure in relation to children in need of care and protection – Open shelter – Place of safety – Foster care – Children's/Shelter homes – Institutions' roles (public/private) – Adoption and sponsorship of children.

Chapter – 9 Juvenile Justice Process.

- Pre-trial, trial and sentencing – Probation – Juvenile deterrence practices – Rehabilitation and social re-integration – After care programs – Nature and role of diversion programs – Disposition process
- Social Investigation and Reporting and its impact on rehabilitation – Individua Care Plan (ICP) – Legal and ethical role, Communication skills and attitudes (move away from apathy to empathy) of Practitioners (Special Juvenile Police Unit) in pre-trial and during trial for timely disposition of cases and forensic investigations/interviewing
- Role of families/guardians (support persons) in the trial and post-trial process – Repatriation – Child friendly atmosphere to be initiated and implemented in courts (JJB and CWC) and police stations – Best practices (Local and International) – Do's and Don'ts.

Text Books:

1. 1 Krishna Pal Malik (2011) "Penology, Victimology, and Correctional Administration in India' Allahabad Law Agency, Hariyana
2. 2 Siegel J Larry (2006) "Criminology 9th Edition" Thomas Publications, USA.
3. 3 Johnson, H. M., (1960), 'Sociology: A Systematic Introduction', Allied Pub. New Delhi.
4. 4 Ashoka (2014) "Samagra Aparadha Vidhnyana" Sudha Publications, India.
5. 5 Amberley R. Buxton, Susan Rodger, Anne L. Cummings and Alan W. Leschied (2006). The change process in clients with high needs. Canadian Journal of Counseling.
6. 6 Johnson, H. M., (1960), 'Sociology: A Systematic Introduction', Allied Pub. New Delhi.
7. Youth offending and Restorative Justice – Tim Newburn

E-Resources:

- https://sg.inflibnet.ac.in/bitstream/10603/222579/4/04_chapter%201.pdf
- https://study.com/academy/lesson/what-is-juvenile-delinquency-definition-theories-facts.html 21/10/2019
- https://shodhgangotri.inflibnet.ac.in/handle/123456789/3412
- https://en.wikipedia.org/wiki/Child_abuse
- https://www.unicef.org/child-rights-convention/child-rights-why-they-matter
- https://shodhganga.inflibnet.ac.in/bitstream/10603/66825/19/19_conclusion%20and%20suggestions.pdf

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

DSC (6) Syllabus for B.A Criminology and Forensic Science (Basic and Honors)

Course Code:231573	**Course Title**: **DSC (6)** FIELDWORK/ PROJECT/ DISSERTATION/ INTERNSHIP (Practical)
Course Credits :02(2:0:0)	**Hours of Teaching/ Week:**4
Total Contact Hours: 60 Hours	**Formative Assessment Mark** :25
Exam Duration3 Hours (Practical)	**Semester End Examination Marks: 25**

Practical Content

SUGGESTED TOPICS

1. Crime in urban and rural areas.
2. Railway crimes.
3. Study on violent crimes.
4. Prison administration.
5. Police administration.
6. Police training.
7. Police-Community relations
8. Police help-line.
9. Forest crimes.
10. Criminal personality tendencies- groups; tribes.
11. P.O. Act- released offenders on probation.
12. Prisoners Act- Released convicts.
13. Victims of Crime.
14. Communal violence.
15. Juveniles in conflict with law.
16. Child labor.
17. Drug abuse
18. Voluntary agencies.
19. Ragging.
20. Economic offences.
21. Cybercrimes.
22. Prostitution- sex workers.
23. Human Rights.
24. Female criminality.
25. Crimes against women.
26. Crimes against children.
27. Mass media and crime.
28. Case Studies.
29. Pornography.
30. Crimes against weaker sections.
31. Habitual Criminals
32. Consumer Protection.

Note: Fieldwork/ Project/ Dissertation/ Internship a student can choose any related topics pertaining to the field of Criminology & Forensic Science other than the mentioned above.

STUDY METHODOLOGY: The students are given an option to select one of the above-mentioned topics. During the allocated session, the topic will have to be studied and a specific methodology is to be followed;

1. Selection of the topic
2. Study the topic to evolve the statement of the problem
3. Literature survey
4. Methodology
5. Collection of data or information on the institution or case (depending upon the topic and method)
6. Analysis and interpretation of the data.
7. Findings and conclusions.

Each of the students will be assigned a study supervisor.
The pedagogy to be followed is to mentor the student, review progress and suggest corrections.
The student will have to attend the designated classes and the teacher assigned will conduct the contact session in relation to the research methods to his/her assigned students.
The designated classes for the field work will be mentioned in the college and department time table.
The contact sessions will be deemed to be a part of the practical workload of the designated teacher.
Finalization and submission of the report will have to take place at least one week before the scheduled university practical examination.
The report shall contain letters of permission from the institutions and endorsement thereof as to having visited the institution for collection of information.
The copies of the filled in questionnaires will have to be submitted in a separate file in case if the student has used the survey method.
The reports shall be evaluated at the term end examination, conducted by the University of Mysore.
The evaluation will also be based upon the viva-voce, in relation to the report.

Course Articulation Matrix –231573

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	1	-	1	1	1	1	2	2	1	1
CO2	2	2	1	1	1	2	2	1	2	2	1	2
CO3	2	2	2	3	1	1	1	2	1	2	2	2
CO4	1	3	3	3	3	2	2	2	3	3	3	2
Weighted Average	1.75	2.25	1.75	2.33	1.5	1.5	1.5	1.5	2	2.25	1.75	1.75

DSC (7) Syllabus for B.A Criminology and Forensic Science

Semester VI:

Course Code: 231672	**Course Title**: **DSC (7)** Forensic Dactyloscopy and DNA Fingerprinting (Theory) **DSC (7)** Examination of Fingerprints & Footprints (Practical)
Course Credits :06 (4:0:2)	**Hours of Teaching:**60 (Theory) 60 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark**: 40 (Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Recognizing the significance of DNA and the forensic dactyloscopy idea.
CO2: Educating oneself on the tenets and laws of individuality.
CO3: Gaining better knowledge on crimes, scams, and the methods used to investigate them in India.
CO4: In order to understand the forensic significance of forensic dactyloscopy and DNA in criminal justice systems

Content of Theory course	Hours
Unit-I: Introduction to Dactyloscopy	**15**

Chapter-1Meaningof Dactyloscopy

- Meaning and Scope; Print Science, Importance of Print Science,
- Morphology of Finger prints and Footprints, Embryogenesis.
- Basic Features and Principles of Fingerprints
- Historical Development of Print Science.
- Organization of State and Central Finger print Bureaus,
- DermatologicalformationandDiseasesinfluenceonthedamagesoffingerprints, Biometric unique ness, and Finger prints as Evidence.

Chapter-2Classification of Finger Prints Patterns

- Meaning and importance of classification of fingerprint patterns.
- Explaining various types of classification of Fingerprints;
- Henry classification and its examination,
- Secondary classification system,
- Subsecondaryclassificationnsystem,
- Secondary sub secondary classification system,
- Key classification
- Final classification and Single digit classification system
- Fingerprint Patterns: Fingerprint Peculiarities / Minutiae and Characteristic

Chapter-3 Significance of palm prints

- Significance of palmprints, ATD Angle, Shape, Size of Palms, Ridge Tracing, Biometric Minutiae.
- Poro scopy and Edgeoscopy, Characteristics of pores–size, position and latent print formation of pores.

Unit-II Development of Finger Prints.	15

Chapter–4 Development of Finger Prints

- Types of Chance Prints at Scene of Crime
- Location and preservation of chance print at scene of crime.

Chapter-5PhysicalMethodsforLatentFingerprintDevelopment

- Powder Methods: Regular: - Black powder and white powder. Metallic: Aluminum powder and Magnetic black powder. Fluorescent: Greene scent and pink scent fluorescent powders.
- Iodine Fuming& Cyanoacrylate.

Chapter-6ChemicalandPhotography Methods for Fingerprint Development

- Gentian Violet and Silver Nitrate Method.
- Ninhydrin Method etc.
- Recording of Latent Prints and Visible prints by Slanting Photograph.

Chapter-7 Biometric, Digital Imaging and Green Methods

- Forensic application of Biometrics, Biometric Impression on Scanner/Live Scans.
- Application of digital imaging process in Fingerprint science.

AFIS application in Finger Print Bureau, Application of Alternate light sources (ALS) in finger print detection

Unit-III Foot Prints	15

Chapter-8Developmentof Foot Prints

- Meaning, Types, Importance
- Tracing of surface footprints,
- Casting and lifting of surface and sub-sunken footprints
- Gait pattern analysis–
- Determination of Sex, Height, Age of a person

Gait pattern analysis

Unit-IV DNA Finger Prints	15

Chapter-9MeaningandImportanceof DNA profile

- Meaning of DNA Finger Prints and Scopes
- Importance of DNA profile
- Legal procedure for conducting DNA profile
- Circumstances of usage of DNA Profile

Chapter–10LegalprovisionsofDNAprofile.

- Source of DNA: Body Fluids, Hair, Skin Tissues and Nail etc.
- Role of DNA is Sexual offence cases

References

1 Andrew R.W.Jackson, Julie M Jackson, 2011, " Forensic Science", Pearson Education Limited.
3 J C Upshaw Downs, Anjali Ranadive, Swienton , 2002, "Ethics in Forensic Science, Academic
Press Publications.
4 Jay A Siegel, KatheyMirakovits, 2013, " Forensic Science: The Basics", CRC press.
5 Jim Fraser, Robin Williams, 2013,"Hand book of Forensic Science", Routldge publications.
6 Max.M.Houck, Jay A Siegal,2010, "Fundamentals of Forensic Science" Academic Press.
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9 J C Upshaw Downs, Anjali Ranadive, Swienton, 2002, "Ethics in Forensic Science, Academic
Press Publications.
11. Walls H. J. (2nd Ed. 2008), – Forensic Science: An Introduction to Scientific Crime Detection,
Universal Law Publishing Co. Pvt. Ltd. New Delhi-33
12. Forensic Science in Criminal Investigation and Trials, B. R. Sharma
13. John Townsend, 2008, "Forensic Evidence: Prints", Crabtree Publishing House
14. Bumbrah, G. S.; Small particle reagent (SPR) method fordetection of latent fingermarks: A
review. Egyptian Journal ofForensic Sciences 2016, 6, 328. [CrossRef]
15. Linda L Klepinger, 2006, "Fundamentals of Forensic Anthropolgy", John wiley and sons.

DigitalReference

https://www.britannica.com/topic/dactyloscopyhttps://forensicfield.blog/dactyloscopy/https://www.researchgate.net/publication/355065615_Fingerprint_Development_Techniques_A_Reviewhttps://www.wiley.com/en-us/Fingerprint+Development+Techniques:+Theory+and+Application-p9781119992615https://www.ijert.org/an-advanced-method-fingerprint-recognition-and-analysis-for-all-investigationindustrial-applicationshttps://www.taylorfrancis.com/chapters/mono/10.1201/9781420041347-7/methods-latentfingerprint-development-ashim-datta-henry-lee-robert-ramotowski-gaensslenhttps://www.sciencedirect.com/science/article/abs/pii/0031320395001069#:~:text=Fingerprints%20are%20classified%20into%20five,loop%2C%20right%20loop%20and%20whorl.https://www.cse.msu.edu/~cse802/Papers/802_FPClassification.pdf

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

Semester-VI

Content of Lab Practical Course DSC

Credits:02 Marks: 25+25=50

List of Experiments to be conducted

1. Recording of fingerprints – Pattern analysis,
2. Identification of Ridge characteristics,
3. Ridge tracing & ridge counting, Comparison of fingerprints
4. Developing latent fingerprints – Physical methods &amp
5. Developing latent fingerprints – Chemical Methods
6. Recording of foot prints
7. Identification of Gait patterns
8. Tracing of surface footprints
9. Casting method of Sunken footprints.
10. Recording of fingerprint using iodine fuming method.

Pedagogy: Conduct experiments, applying forensic techniques

Course Articulation Matrix-231672

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	2	3	3	2	1	2	2	1	2	3
CO2	2	2	2	3	3	3	2	2	2	2	2	2
CO3	2	3	3	3	3	3	2	2	2	2	3	3
CO4	3	3	3	3	3	2	3	2	3	3	3	3
Weighted Average	2.25	2.5	2.5	3	4	2.5	2	2	2.25	2	2.5	2.75

DSC (8) Syllabus for B.A Criminology and Forensic Science

Semester VI

Course Code:231673	**Course Title**: **DSC (8)** Corporate Crimes (Theory) **DSC (8)** Examination of Frauds and Corporate Crimes (Practical)
Course Credits :06 (4:0:2)	**Hours of Teaching:**60 (Theory) 60 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Mark**:40(Theory) 25(Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 40 (Practical)

Course Outcomes (COs):

CO1: Recognize what corporate crimes are, how they work, and what they do.

CO2: Explain the basic elements and major scope, types of Corporate Crimes.

CO3: Identifying the different corporate crimes that have occurred in India.

CO4: Getting familiar with India's corporate crime laws and prevention strategies.

Content of Theory Course	Hours
Unit-1Introduction Corporate Crimes	15Hrs

Chapter-1NatureofCorporateCrime

- Meaning and Definition of Corporate Crimes.
- Various Types of Corporate Crimes
- Famous Cases of Corporate Crimes

Chapter-2 Forms of Corporate Crimes

- Bankruptcy related Frauds
- Exploiting assets and scams
- Mortgage Frauds
- Share Sale Frauds

Unit-2CorporateFrauds	15Hrs

Chapter-3VariouskindsofCorporateFraudsinIndia.

- Meaning & Definition of Fraud
- Types of Fraud- Individual & Corporate
- Characteristics of Fraud
- Trends of Scams: National &Globa

Perspective

Chapter-4Fraudin Banking Sector

- Definition & Scope of Fraud in Banking Sector
- Banking Impersonation

Chapter-5 Types of Frauds

- Fraud against accounts
- Fraud against Card (Debit/Credit)
- Electronic Fraud and Miscellaneous Fraud

Unit-3IntroductiontoInsuranceFrauds	**15 Hrs**

Chapter-6MeaningofInsuranceFrauds

- Definition, Nature & Scope of Insurance
- Losses due to Insurance Frauds.

Chapter-7 Types of Insurance Frauds

- Property Insurance
- Motor Vehicle Insurance
- Health Insurance
- Role of Investigation in Insurance Frauds

Unit-4PreventionofCorporateCrimes	**15 Hrs**

Chapter-8Measures in preventing Corporate Crimes in India

- Laws, Regulation and Supervision
- Corporate Governance

Chapter-9Private Sector in India

- Governance of Private Sectors in India.
- Laws, Regulation and Supervision
- Suspicious Transaction reporting

Text Books:

1 Anabui, Farad and sabotage, Jaico Publishing House. Kakabadse, Andrew, 2004, Corporate
2 Blum Richard H, 1972, Deleivers and Deceived, Charles, C. Thomas Publishers.
3 Bologna, Jack, 1984, Corporate Fraud, Butterworth Publishers.
4 Celia Wells, "Corporations and Criminal Responsibility".
5 Essential Commodities Act, 1955, 2005, Universal Law Publishing Co. Pvt. Ltd.
6 Ghosh Murrain, 1979, Black money – The case for India, Subarna Rekha, Calcutta.
7 Green Timothy, 1977, The Smuggling Business, Aldus Books, London. Internationally, Kogan Pagr Ltd.
8 Lal Bhure, 2003, Money Laundering: An insight into the dark world of Financial Frauds, Siddharth Publications.
9 Nabhi's Income Tax Guidelines and Mini Ready Reeckoner, 2009, Anabhi Publication Bare Acts:
10 Pitchandi Nand Sivamurthy A, 1985, Insurance Frauds, the Indian Soceity of Criminology, Department of Psychology, Madras.

DigitalReference:

- https://www.britannica.com/topic/corporate-crime
- https://www.financierworldwide.com/roundtable-corporate-fraud-nov22#.ZDZkwPZBzIU
- https://www.weforum.org/communities/gfc-on-good-governance
- https://gppreview.com/2022/12/12/criminal-liability-of-corporations-in-india-an-environmental-perspective/
- https://www.datavisor.com/wiki/types-of-bank-frauds/
- https://www.investopedia.com/terms/i/insurance-fraud.asp
- https://www.iii.org/article/background-on-insurance-fraud

Pedagogy: Lecture, Assignments, Interactive Sessions, ICT, Group Discussion

Course Articulation Matrix- 231673

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	2	3	3	2	1	3	3	2	3	3
CO2	2	2	3	3	3	2	1	3	3	2	3	3
CO3	3	3	3	3	3	3	1	3	3	3	3	3
CO4	3	3	3	3	3	3	1	3	3	3	3	3
Weighted Average	2.5	2.5	2.75	3	3	2.5	1	3	3	2.5	3	3

Semester-VI

Content of Lab Practical Course DSC

Credits:02 Marks: 25+25=50

1. To analysis the Famous Indian Corporate Crimes.
2. Examination and Identification of the Forged Check Books
3. Examination and Identification of the Forged affidavits and other Government Documents
4. Counterfeit of Notes and Coins.
5. Examination of Forged Signature
6. Evaluate and study of preventive measures towards Frauds in local and national banks (Plastic
   Cards, E-transactions, Gold and other ornaments)
7. Examination of Peculiar Characteristics of Different Documents like: Income Tax Returns,
   Insurance Bonds, E-certificates and E-documents.
8. Explore cases of corporate environmental crimes, such as illegal dumping or pollution.
9. The media's coverage of corporate crime
10. To find common themes and disparities, compare and contrast corporate crimes across other businesses,
    such as the pharmaceutical, financial, or energy sectors.

References

1 LNJN National Institute of Criminology and Forensic Science, “A Forensic Guide for Crime Investigators – Standard Operating Procedures”, LNJN NICFS, 2016.
2 Cory Altheide and Halan Carvey; “Digital Forensics with Open Source Tools”, Syngress Publication.
3 Sherri Davidoff and Jonathan Ham; “Network Forensics – Tracking Hackers through Cyberspace”, Pearson Publications, 2012.

INTERNSHIP

Semester: VI

Course Code: 23INTCRI01	**Course Title**: **SEC**: INTERNSHIP
Course Credits: 02 (0:0:2)	**Hours of Teaching/ Week:**
Total Contact Hours: 90 Hours	**Formative Assessment Mark**:100 Marks (C1= 50 + C2= 50)

Note: This course will run as per the guidelines defined by the BoS Criminology and Forensic Science, University of Mysore, Mysuru, and the same is approved by BoS, Criminology and Forensic Science SBRR Mahajana First Grade College, Mysuru.

Course Outcomes (COs):

CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities before Graduation.

CO2: Develop Communication, Interpersonal, Work Habits, Attitude, and other Critical Skills required for a job.

Course Articulation Matrix – 23INTCRI01

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	2	-	2	3	3	2	2
CO 2	3	3	3	3	3	2	1	1	3	3	2	2
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**1**	**1.5**	**3**	**3**	**2**	**2**

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively for the semester. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

The student is evaluated for 100marks in C1 and C2 as per the following scheme:

Assessment Criteria	Marks
Project Presentation Skills	50
Project Development Skills and report	50
Total	**100**

Continuous Formative Evaluation/Internal Assessment (DSC)

Total marks for each course shall be based on continuous assessments and semester end Examination. The patterns is 40:60 for IA and Semester End theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

Theory		Practical
Total Marks	100 Marks	50 Marks
Continuous Assessment-1(C1)	20 Marks	10 Marks
Continuous Assessment-2(C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks Shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the courses and within 45 working days of semester program

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c)During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d)In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment /project work etc.

The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course Shall be as under:

	C1Marks	**C2 Marks**	**Total Marks**
Session Test	10 Marks	10 Marks	20 Marks
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	10 Marks	10 Marks	20 Marks
Total	20 Marks	20 Marks	40 Marks

For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the ratio is 25 (10 + 15):25).

Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.

The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.

There shall be no minimum in respect of internal assessment marks.

Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations-V&VI Semester

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3hours. The student will be evaluated on the basis of Procedure development and its execution. The student has to compulsorily submit the practical record for Evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

Part-A Practical Exercises (C1): 10 marks
Part-B Practical Exercises (C2): 10 marks + Record: 05 marks = 15 marks

- The student is evaluated for 25 marks in C3 as per the following scheme:

Assessment Criteria	**Marks**
Any Three Questions Decided by the External Examiner	10+10+05
Total	25

DSC Theory Question Paper Pattern
For V &VI Semester

Max Marks: 60 **Times:2 ½ Hours**

Instruction: Paper setting

- The Question Paper is divided into 3 parts: Part-A, Part-B and Part-C
- Part-A, Part-B, Part-C With Internal Choice.(Short, Medium and Long answer question)
- Part-A Each Question Carries 2 Marks and student has to answer 5 out of 7questions.
- Part-B Each Question Carries 5 Marks and student has to answer 4 out of 8 questions.
- Part-C Each Question Carries 10 Marks and student has to answer 3 out of 5 questions.

Part-A

I Answers any FIVE questions of the following in about 50 words 5x2=10

a.
b.
c.
d.
e.
f.
g.

Part- B

II. Answer any FOUR questions of the following in about 300 words 4x5=20

2.
3.
4.
5.
6.
7.
8.
9.

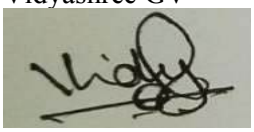
Part-C

III. Answer any THREE questions of the following in about 500 words 3x10=30

10.
11.
12.
13.
14.

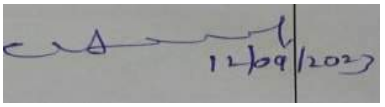
Department of Criminology and Forensic Science,
BoS Meeting – 12.09.2023

1. Vidyashree GV



2. Chandan Kumar C

3. Dr. G.B Arvind



4. Shashidhar. E

5. Prof. Basavaraj D Masthi

   Absent

6. Dr. Sarita D' ssouza

   Absent

7. Dr. Krishnaraju.K

   Absent

8. Fancis Devasahayam B

Education to Excel

SBRR Mahajana First Grade College (Autonomous)

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BOARD OF STUDIES (BoS)

DEPARTMENT OF ECONOMICS

UG [√]

PG [ ]

NEP Syllabi for I and II Semester BA Economics

2021-22

DEPARTMENT OF ECONOMICS

Motto

Economics for Empowerment and Enhancement

Vision

To prepare Students for successful careers as applied economists through

fine tuning of minds & to make them understand and analyze the dynamics of Economic changes

Mission

Providing a sound theoretical base to develop quantitative aptitude,

to substantiate theoretical learning,

Exposure to practical aspects of present day economic challenges

POs	Details of the Programme Outcomes (POs)
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Department of Economics - List of Board of Studies Members

Sl. No.	Category	Name	Designation	Address for communication	E-mail and Mobile No.
01	**University Nominee**	**Dr. Navitha Thimmaiah**	Associate Professor	DoS in Economics & Cooperation, UoM, Mysuru.	navithaprasad@gmail.com +919036180571
02	**HoD & Faculty of the Department**	**Venkatalakshmi M N**	Associate Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	venkatalakshmimn.fgc@mahajana.edu.in +91 9448472024
		Dr.Pushparani P G	Assistant Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru - 12	pushparanimfgc@gmail.com +91 9945094843
		Siddappa R	Assistant Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru - 12	mnsh1611@gmail.com +91 8050365338
		Chaluvegowda S M	Assistant Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru - 12	Chaluvegowda25@gmail.com +918217310214
03	**Two Experts from other University**	**Dr. Ramakrishna B M**	Associate Professor	University college,Hampanakatta, (A Constituent college of Mangalore University) Mangaluru-575001	rama_bmr@yahoo.co.in +91 9448427705
		Dr. E. Thippeswamy	Associate Professor	Field Marshal K. M. Cariappa College, (A Constituent college of Mangalore University) Madikeri-571201	ethippeswamy@yahoo.com +91 9448639972
04	**Alumnus**	**Dr. Roopa Patavardhan**	Alumnae & Assistant Professor	School of Business studies and social sciences, Christ (Deemed to be University)Hulimavu, Bengaluru-76	roopa.patavardhan@christuniversity.in +91 9901997086
05	**Industry Expert**	**Nikhil Maruthi**	Stakeholder & LLP Partner	Merako Media Pvt Ltd Mysuru	Nikhilmaruthi26@gmail.com +91 9650266082

Duration of the programs and Credit Requirements:

A Certificate / Diploma/ Bachelor Degree or Bachelor Degree with Honours in Economics in BA Economics is awarded at the completion of every progressive year.

Exit Option	**with Certificate/ Diploma/ Degree/Honors**
Successful completion of First year (two semesters) of the four years multidisciplinary undergraduate degree programme	Certificate in Economics
Successful completion of second year (four semesters) of the four years multidisciplinary undergraduate degree programme	Diploma in Economics
Successful completion of three year (six semesters) of the four years multidisciplinary undergraduate degree Programme	Bachelor of Arts Degree in Economics
Successful completion of four years (eight semesters) of the four years multidisciplinary undergraduate degree Programme	Bachelor of Arts Degree with Honours in Economics
Successful completion of Five years (Ten semesters) of the five years multidisciplinary degree programme	Master of Arts Degree with Honours in Economics

Evaluation process of IA marks:

- The first component (C1), of assessment is for 20 marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within the first half of the semester.
- The second component (C2), of assessment is for 20 marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of the remaining 50 percent of syllabus of the courses of the semester.
- During the 17th – 20th week of the semester, a semester end examination of Two and Half hours (2.30) duration shall be conducted by the University for each Course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

- In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the concerned teacher/ Program Coordinator / HOD and suitable decision taken accordingly.
- For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (of A4 size), graph sheets etc., required for such tests / assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / work etc.

The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

Outline for continuous assessment activities for C1 and C2

Activities	C1	C2	Total Marks
Session Test	10 marks	10 marks	20
Case study / Assignment / Field work / Project work/ Academic Quiz/ Review of the Book/ etc.	10 marks	---	10
Case study / Assignment / Field work / Project work/ Academic Economics Quiz/ Review of the Book/ etc	---	10 marks	10
Total	20 marks	20 marks	40

Year-wise Programme Structure (NEP 2020)

Discipline Specific Courses (DSC) and Open Elective (OE)

I & II SEM BA – Economics (2022-23)

Course Type, Code and Title		Hour/Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L: T:P	C1	C2	C3		Marks
Economics – I Sem									
DSC-1 211137	Basic Economics-I	**3**	**0**	**3:0:0**	**20**	**20**	**60**	$2\frac{1}{2}$ **Hours**	**100**
DSC-2 211138	Contemporary Indian Economy	**3**	**0**	**3:0:0**	**20**	**20**	**60**	$2\frac{1}{2}$ **Hours**	**100**
OE-1	1. Kautilya's Artha Shastra 21OEECO101 2. Pre-reforms Indian Economy 21OEECO102 3. Development Studies 21OEECO103 **(Any one to be opted)**	**3**	**0**	**3:0:0**	**20**	**20**	**60**	$2\frac{1}{2}$ **Hours**	**100**

Economics – II Sem

Course Type, Code and Title		Hour/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L: T:P	C1	C2	C3		Marks
DSC-3 211237	Basic Economics -II	**3**	**0**	**3:0:0**	**20**	**20**	**60**	2 ½ Hours	**100**
DSC-4 211238	Karnataka Economy	**3**	**0**	**3:0:0**	**20**	**20**	**60**	2 ½ Hours	**100**
OE-2	1.Contemporary Indian Economy-21OEECO201 2.Sustainable Development Goals -21OEECO202 3.Economics of Business Environment-21OEECO203 (**Any one to be opted)**	**3**	**0**	**3:0:0**	**20**	**20**	**60**	2 ½ Hours	**100**

BA (Honors) in Economics

Semester - 1

Course Code: 211137	**Course Title:** DSC 1: Basic Economics – I
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes:

CO1. Identify the facets of an economic problem and Examine the basic economic concepts and terms.

CO2. Illustrate the operation of a market system, analyze the production and cost relationships of business firms.

CO3. Evaluate the pricing decisions under different market structures; and Use basic cost- benefit calculations as a means of decision making

Content of Basic Economics 1	42 Hrs
Unit– 1 Basic Concepts in Economics:	**14**
Chapter No. 1 Nature and Scope of Economics: Meaning of Economics Nature of Economics Scope of Economics Methods of Economics	5
Chapter No. 2 Thinking Like an Economist: Thinking Like an Economist The Economist as Scientist The Economist as a Policy Adviser	4
Chapter No. 3 Economic System: Meaning and Types of Economic Systems Circular Flow of Economic Activities Evolution of the Present Economic System **Practicum:** 1. Group Discussions on Choice Problem Assignment on Types of Economic Systems	5
Unit – 2 Demand, Supply and Markets:	**14**
Chapter No. 4. Firms and Households:	4

Meaning of Firms and Household Relationship Between Firms and Household Input and output markets **Chapter No. 5. Demand and Supply:** Individual Demand Market Demand Determinants of Demand & Supply Market Equilibrium **Chapter No. 6. Elasticity and its Measurement:** Meaning & Types of Elasticity of Demand Price, Income and Cross Elasticity of Demand Measurement of Elasticity of Demand Determinants of Elasticity of Demand **Practicum:** 1. Estimation of Demand and Supply Elasticities 2. Solving an Equilibrium Problem	5 5
Unit – 3 Cost and Market Structures:	**14**
Chapter No. 7 Production and Production Function: Meaning and types of production Function Total Product Average Product Marginal Product **Chapter No. 8. Production, Cost and Revenue Curves:** TC, AC and MC Cost in the Short-run Fixed Costs and Variable Costs Long run AC and MC TR, MR and AR **Chapter No. 9. Market Structure:** Markets: Meaning and Features of Perfect and Imperfect/Monopolistic Competition Meaning and Features of Monopoly, Duopoly and Oligopoly **Practicum:** 1. Calculation of various costs, a mini-project can be taken up. 2. Studying the real-life pricing mechanism through a project/ case studies	4 5 5

References :

1. Cohen, A.J. (2020). *Macroeconomics for Life: Smart Choices for All? + MyLab Economics with Pearson eText* (updated 2nd ed.). Toronto, ON: Pearson CanadaInc. Type: Textbook: ISBN:9780136716532
2. Cohen, A.J. (2015). *Microeconomics for Life: Smart Choices for You + MyLab Economics with Pearson eText* (2nd ed.). Toronto, ON: Pearson Canada Inc. Type: Textbook: ISBN:9780133899368
3. Case Karl E. and Fair Ray C. Principles of Economics, Pearson Education Asia, 2014.
4. Mankiw N. Gregory. Principles of Economics, Thomson,2013.
5. Stiglitz J.E. and Walsh C.E. Principles of Economics, W.W. Norton & Co, New York, 2011

Web links:

- https://leverageedu.com/blog/nature-and-scope-of-economics
- https://old.amu.ac.in/emp/studym/100007461
  https://corporatefinanceinstitute.com/resources/economics/economic-system
- https://testbook.com/learn/economics-demand-and-supplyhttps://www.tutorialspoint.com/managerial_economics/theory_of_production.htm
- https://www.analyticssteps.com/blogs/simple-guide-perfect-and-imperfect-competition

Course Articulation Matrix - 211137

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	2	2	1	1	1	-	2
CO2	2	2	1	1	2	2	2	1	1	1	1	2
CO3	3	2	2	2	2	2	1	1	1	1	-	2
Weighted Average	2.3	1.6	1.3	1.3	1.6	2	1.6	1	1	1	1	2

Semester I

Course Code: 211138	**Course Title:** DSC 2: Contemporary Indian Economy
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Comprehend the LPG Concept and current problems of Indian Economy

CO2. Identify the factors contributing to the recent growth of the Indian Economy

CO3. Analyze the sector specific policies adopted for achieving the rational goals & Review various economic policies adopted by Govt. Authorities.

Content of Course 1	42 Hrs
Unit – 1 LPG POLICIES, ECONOMIC REFORMS AND AGRICULTURE:	**14**
Chapter No. 1 Recent Issues: Concept of LPG India's population policy Demographic Dividend	4
Chapter No. 2 Urbanization and governance: Urbanization and Smart City Mission Impact of COVID-19 Pandemic Atma Nirbhara Bharat Abhiyan	4
Chapter No. 3 Economic Reforms and Agriculture: Commercialization and Diversification of Agriculture Public Distribution System : TPDS Doubling Farm Incomes -MGNREGS (brief introduction)	6
Practicum 1. Mini-project to ascertain the impact of pandemic on lives of different sections of population 2. Field visits to understand the agrarian situation	

Unit – 2 INDUSTRY, BUSINESS, FISCAL POLICY:	**14**
Chapter No. 4. Industrial Policy: New Industrial Policy and Changes Public Sector Reforms Privatisation and Disinvestment	4
Chapter No. 5. Business: Ease of Doing Business Performance of MSMEs Role of MNC's in Industrial Development	5
Chapter No. 6. Fiscal Policy: Tax, Expenditure, Budgetary Deficits GST (meaning and features), Fiscal Federalism and Fiscal Consolidation (in brief) Recommendations of the Current Finance Commission **Practicum**: Mini-projects to assess the business climate	5
Unit – 3 MONETARY POLICY, FOREIGN TRADE AND INVESTMENT:	**14**
Chapter No. 7 Monetary Policy: Organisation of India's Money Market Financial Sector Reforms	5
Chapter No. 8. Money and Capital Markets Working of SEBI in India Changing roles of the Reserve Bank of India Foreign Banks and Non-Banking Financial Institutions Demonetization and its impact	5
Chapter No. 9. Foreign Trade and Investment: Direction of India's foreign trade Balance of payments since1991 (trends) FDI – Trends and Patterns New EXIM policy Bilateral and Multilateral Trade Agreements (in brief)	4
Practicum: 1. Computation and analysis of Wholesale Price Index, Consumer Price Index: 2. Group Discussions on India's trade policies and trade agreements	

References:

1. Bardhan, P.K. (9th Edition) (1999), The Political Economy of Development in India,
2. Oxford University Press, New Delhi.
3. Bhaduri Amit, (2015), A Model of Development By Dispossession, Fourth Foundation
4. Byres Terence J. (ed.), (1998), The State, Development Planning and Liberalisation in India, Delhi, OUP
5. Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New
6. Delhi.
7. Frankel Francine R., (2004), India's Political Economy, Delhi. OUP Jenkins Rob, 2000, Economic Reform in India, Cambridge,CUP
8. Jalan, B. (1996), India's Economic Policy- Preparing for the Twenty First Century, Viking, New Delhi.
9. Joshi Vijaya and L.M.D. Little, (1998), India's Economic Reform 1991-2001, Delhi,OUP.
10. Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation
11. Mishra S.K & V.K Puri (2001) "Indian Economy and –Its development experience", Himalaya Publishing House.
12. Mukharji Rahul (ed.) (2007), India's Economic Transition: The Politics of Reforms, edited by Rahul Mukherji, Oxford University Press , New Delhi.

WEBLINKS

- **https://en.wikipedia.org/wiki/Smart_Cities_Mission**
- **https://prepp.in/news/e-492-new-industrial-policy-1991-indian-economy-notes**
- **https://en.wikipedia.org/wiki/Foreign_trade_of_India**
- **https://tavaga.com/tavagapedia/sebi**
- **https://entri.app/blog/role-of-rbi-in-indian-banking-system**
- **https://www.drishtiias.com/daily-updates/daily-news-editorials/a-new-foreign-trade-policy-for-india**
- **https://www.jagranjosh.com/general-knowledge/population-policies-of-india-1448689756-1**

Course Articulation Matrix-211138

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	3	3	3	2	2	2	2	1	1	-	2
CO2	2	2	2	3	2	1	2	1	1	1	1	1
CO3	1	1	1	2	1	-	2	1	1	1	1	1
Weighted Average	1.6	2	2	2.6	1.6	1.5	2	1.3	1	1	1	1.3

Semester I

Course Code: 21OEECO101	**Course Title: OE1 :** Kautilya's Arthashastra
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1 Enlighten the students about the ancient fundamentals about political and economic constituents, which will frame out a basic Knowledge of understanding the modern trends.

CO2 Identify the upcoming needs in the area of policy making for states at national and international level.

CO3 Equip them with the science of Governance, so it projects out all the dimensions needed to be evaluated by the students about the present socio-economic and political rules and regulations of the state.

Unit	Description	42 Hrs
I	**Chapter 1:** Introduction to Arthashastra	3
	Chapter 2: Various disciplines of Indian Education System	3
	Chapter 3: Place of Kautilya's Arthashastra among them	3
II	**Chapter 4:** Importance of science dealing with governance - Introduction to	5
	Tantrayuktis – The methods of preparing a compendium, tools and techniques of writing a compendium	
	Chapter 5: Governance Procedure- Appointment of the ministers, duties of	5
	Government superintendents, treasury, spies, royal writ, punishment- Vakparushya and Dandaparushya;	
	Chapter 6: Laws of Inheritance – Determination of forms of Agreements,	5
	determination of legal disputes, Division of inheritance, Special shares in	
	inheritance, Distinction between sons	
III	**Chapter 7:** Economic Dimension- Body of income of the state, collection of	9
	revenue, duties of a Chamberlin (Koshadhyksha), Forty ways of embezzlement of the revenue, Punishment for the embezzlement of revenue,	

	Expenditure, Loss and Profit, Keeping up the Accounts, Recovery of Debts, Deposits of the state, Resumption of the gifts, Remission of Taxes	
	Chapter 8: Political Dimension- Six-fold Policy- War, Combination of Powers, Agreement of Peace with or without definite terms, Double Policy, Circle of States Conduct of Corporations, Secret means, Plan of treatise	9

Suggested readings:

1.Arthashastra of Kautilya by T. Ganapati Shastri, Chaukhambha Surbharti Prakashana, Varanasi, India, 2005.

2.Arthashastra of Kautilya by Sri. Vacaspati Gairola, Chaukhambha Vidyabahavan, Varanasi, India, 2013.

3.Kautilya, The Arthashastra by L.N. Rangarajan, Penguin Books Ltd, London.

4. Kautilya's Arthashastra: The Way of Financial Management and Economic Governance, Jaico Publishing House, Mumbai, India.

WEBLINKS:

- https://en.wikipedia.org/wiki/Arthashastra
- https://www.youtube.com/watch?v=Yg_yOUPrB5s
- https://www.youtube.com/watch?v=-WV9KPqjV_I
- https://www.amazon.in/Arthashastra-Kautilya/dp/0140446036

Course Articulation Matrix - 21OEECO101

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	1	1	-	1	1	2	1	2	1	1	-	-
CO2	1	1	2	2	1	1	-	2	1	1	-	-
CO3	1	1	1	2	1	1	2	1	-	1	-	1
Weighted Average	1	1	1.5	1.6	1	1.3	1.5	1.6	1	1	-	1

Semester 1

Course Code: 21OEECO102	**Course Title: OE1** : Pre-Reforms Indian Economy
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1 Trace the evolution of Indian Economy; Identify the structural features and constraints of the Indian Economy

CO2 Evaluate planning models and strategy adopted in India

CO3 Analyze the sector specific problems and their contributions and Review various economic policies adopted towards overall economic growth

Unit	Description	Hours
I	**Features and problems of Indian Economy:**	**15**
	Chapter 1: Features of Indian Economy: India as a Developing Economy Demographic Features Problems of Poverty: Unemployment and Income Inequality	4
	Chapter 2: Issues in Agriculture sector in India: Agriculture Marketing in India Agricultural Price Policy	6
	Chapter 3: Industrial and Service Sectors: Industrial Policy Micro, Small and Medium Enterprises Service Sector in India. **Practicum:** 1. Identifying economic problems and their causes; 2.Mini-project on any aspect of Indian Agriculture, Industry, Service and Public Sectors	5
II	**Economic Policies:**	**13**
	Chapter 4: Planning: Bombay Plan	5

	Gandhian Model Nehru-Mahalanobis Model Objectives and Achievements of Economic Planning in India (before 1991) **Chapter 5: Monetary policy in India** Instruments of Monetary Policy Black money in India – Magnitude and Impact	2
	Chapter-6: Fiscal Policy in India: Tax Revenue Public Expenditure Budgetary Deficit **Practicum:** Assignment on successes and failures of India's planning; Monetary and Fiscal Policy instruments	6
III	**External sector and Nature of Reforms in India**	**14**
	Chapter-7: India's Foreign Trade: Salient Features Volume, Composition and Direction of Trade Balance of Payments	6
	Chapter-8: Pre-reforms Strategies: Stabilization Strategies/Measures in all the three sectors of the economy Tariff Policy: Types and Impact Exchange Rate Dynamics	4
	Chapter 9: Planning Commission: Organization and Objectives Functions Practicum: Calculation of BoP and evaluating trade policies; Assignment and group discussion on the planning commission.	4

References:

1. Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New Delhi.
2. Mishra S.K & V.K Puri (2001) "Indian Economy and –Its development experience", Himalaya Publishing House.
3. Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation
4. Bardhan, P.K. (9th Edition) (1999), The Political Economy of Development in India, Oxford University Press, New Delhi.
5. Jalan, B. (1996), India's Economic Policy- Preparing for the Twenty First Century, Viking,

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- https://www.slideshare.net/BharathiRaj3/monetary-and-fiscal-policy-of-india

Course Articulation Matrix - 21OEECO102

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	1	1	2	2	1	2	1	1	1	-	1
CO2	1	2	2	2	1	1	-	1	1	1	2	1
CO3	1	2	1	2	1	1	2	1	1	1	1	1
Weighted Average	1.3	1.6	1.3	2	1.3	1	2	1	1	1	1.5	1

Semester I

Course Code: 21OEECO103	**Course Title: OE1:** Development Studies
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1 Provide solid foundation of fundamentals required to solve socio economic problems

CO2 Acquire knowledge to appreciate the dimensions of contemporary development issues, to generate sensitivity to problems concerning ethics and human values to develop orientation towards effective communication and critical analysis

CO3 Cultivate professional and ethical attitude, effective Communication skills, teamwork skills, multidisciplinary approach, and to facilitate an advanced understanding and appreciation of the principles, methodologies, value systems, and thought processes employed in human inquiries.

Unit	Description	Hrs
I	**Development: Meaning and Current Challenges**	**9**
	Chapter-1: Meaning of Development: The Concept of Development, Growth and Development Transition from quantitative to qualitative indices	3
	Chapter-2: Modern economic growth: Characteristics of Modern Economic Growth Regional and Global Disparities Common Characteristics and Dissimilarities among Developing Countries.	3
	Chapter-3: Current Development Challenges: Inequality Migration Conflicts Practicum: Group discussion on migration	3
II	**Approaches to Development:**	**12**
	Chapter-4: Development Ethics	2

	Concept and Meaning Principles and Importance of Development Ethics **Chapter-5: Assessing Development:** Per Capita Income Physical Quality of Life Index (PQLI) Gender Empowerment Index HDI	4
	Chapter-6: Approaches of Development: Adam Smith Marx Schumpeter Structuralist Approach Neo-liberalism, IMF and Structural Adjustment Capabilities Approach Practicum: Calculation of different Human Development Indices	6
III	**Theories and Current Issues in Development:**	**21**
	Chapter-7: Theories of Development Theorizing Development - Modernization Theory, Dependency Theory Capitalist World System The Evolution of Thought on Poverty Reduction Colonial Regimes and Their Legacies **Chapter-8: The Industrial Revolution** Genesis and Spread International specialization of Labour/Industry Industrial Labour ILO and its activities to promote labour standards **Chapter-9: Environment and Development** Increasing degradation of natural environment – Water and Air pollution and Deforestation Depletion of Global Commons Sustainable development - Concept and Measures Sustainable Development Goals (SDGs) Climate Change – Causes, Impact, Measures of Mitigation and Adaptations Practicum: Identify the different pollution sources	6 5 10

References:

1. Crocker, D. (2008). Ethics and development theory-practice, Ethics of Global Development Agency, Capability, and Deliberative Democracy,67-106
2. Des Gasper (2008), 'Denis Goulet and the Project of Development Ethics: Development, 8, 99. 481-9, Elsevier Science, 1,pp.10-26.
3. Drèze, Jean and Amartya Sen(2002), India: Development and Participation, second edition. Oxford: Oxford University Press.
4. Gasper, D. (2004). The ethics of development: From Economism to human development. Edinburgh: Edinburgh UniversityPress
5. Myrdal, Gunnar. (1974), "What is Development?" Journal of Economic Issues8(4):729-736.
6. Sen, Amartya (1999) Development as Freedom. New York: Anchor Books.

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- **https://press.princeton.edu/books/hardcover/9780691132921/introduction-to-modern-economic-growth**
- **https://www.investopedia.com/terms/i/industrial-revolution.asp**
- **https://testbook.com/learn/development-and-environment**
- **https://www.acciona.com/sustainable-development/?_adin=02021864894**
- **https://www.nrcm.org/climate/global-warming-air-pollution**

Course Articulation Matrix- 21OEECO103

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	1	2	2	2	2	1	3	2	1	2	1	1
CO2	2	2	1	2	1	2	2	2	1	1	-	1
CO3	1	2	1	2	1	2	2	2	-	-	1	1
Weighted Average	1.3	2	1.3	2	1.3	1.6	2.3	2	1	1.5	1	1

Continuous Internal Evaluation and Semester Examination

Total marks for each course shall be based on continuous assessments and term end examinations. As per the decision of the Karnataka State Higher Education Council, it is necessary to have uniform pattern of 40:60 for CIA and Semester End examinations respectively, among all the Universities, their affiliated and autonomous colleges.

The committee deliberated on the same and suggested the following pattern for the CIE Marks.

Sl. No.	**Parameters for the Evaluation**	Marks
	Continuous Internal Evaluation (CIE)	
A	**Continuous & Comprehensive Evaluation (CCE)**	**20**
B	**Internal Assessment Tests (IAT)**	**20**
	Total of CIE (A+B)	**40**
C	**Semester End Examination (SEE)**	**60**
	Total of CIE and SEE (A+B+C)	**100**

Outline for continuous assessment activities for C1 and C2(DSC&OE)

Activities	**C1**	**C2**	**Total Marks**
Session Test	10 marks	10 marks	20
Case study / Assignment / Field work / Project work/ Academic Quiz/ Review of the Book/ etc.	**10 marks**	**---**	**10**
Case study / Assignment / Field work / Project work/ Academic Economics Quiz/ Review of the Book/ etc	**---**	**10 marks**	**10**
Total	**20 marks**	**20 marks**	**40**

QUESTION PAPER PATTERN (C3) FOR DSC & OE PAPERS

Maximum Marks: 60 **Duration:** $2\frac{1}{2}$ Hours

PART -A

Answer any Five of the following: **5X2 =10**

Sl. No. 1

a.
b.
c.
d.
e.
f.
g.
h.

PART - B

Answer any Six of the following: **6X5 =30**

Sl. No. 2 to 10

PART - C

Answer any Two of the following: **2X10 =20**

Sl. No. 11 to 14

Semester – II

Course Code: 211237	**Course Title:** DSC 3: Basic Economics - II
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1 Examine the operation of the overall economic system; Calculate national income and related aggregates

CO2 Evaluate the macroeconomic policies for solving major problems like poverty and unemployment

CO3 Analyze the relationship between macroeconomic aggregates and the nature of business cycles and policies towards controlling them;

Unit	Description	42 Hrs
I	**Macro Economic Concepts and Relationships:**	12
	Chapter-1: Macro Economy;	5
	Introduction to National Income Accounting	
	Concepts of GDP, GNP and National Income	
	Approaches to calculating GDP, Personal Income, Nominal and Real GDP	
	Limitations of the GDP Concept	4
	Chapter-2: Monetary Economy	
	Characteristics of Money	
	The Demand for Money	
	The Supply of Money and Overall Liquidity Position	3
	Credit Creation	
	Chapter-3: Inflation	
	Meaning and Causes of Inflation	
	Calculating Inflation Rate	
	Impact of Inflation	
	Practicum: 1. Understanding the relationships between various NI concepts used in India's NI accounting;	
	2.Estimating the components of money supply and interpreting the various price indices.	

II	**Macroeconomic Challenges and Policies:**	**12**
	Chapter-4: Macroeconomic Challenges: Business Cycles Economic Growth **Chapter-5: Monetary Policy:** Objectives Instruments **Chapter-6: Fiscal Policy:** Public Finance vs. Private Finance Fiscal policy - Role of Government: Allocation, Distribution and Stabilization	3 3 6
	Practicum: 1. Reviewing the Monetary Policy of RBI; .A project to identify the nature and causes of poverty and the latest central budget	
III	**Public Policy and Globalization:**	**18**
	Chapter 7: Poverty and Public Policy: Meaning, Types and Measurement of Poverty Poverty Alleviation Strategies in India **Chapter 8: International Trade:** The Economic basis for trade—Absolute Advantage and Comparative Advantage. Terms of Trade: Meaning and Types Exchange Rates: Meaning, Types and Determinants Trade Barriers: Tariffs, Subsidies and Quotas Balance of Payments: The Current and Capital Account **Chapter 9: Globalization:** Meaning Importance Pros and cons of Globalization Survey on identification of poor; Calculating the components of BoP of India	6 9 3

References

1. Cohen, A.J. (2020). *Macroeconomics for Life: Smart Choices for All? + MyLab Economics with Pearson eText* (updated 2nd ed.). Toronto, ON: Pearson Canada Inc. Type: Textbook: ISBN: 9780136716532
2. Cohen, A.J. (2015). *Microeconomics for Life: Smart Choices for You + MyLab Economics with Pearson eText* (2nd ed.). Toronto, ON: Pearson Canada Inc.
3. Type: Textbook: ISBN: 9780133899368
4. Case Karl E. and Fair Ray C. Principles of Economics, Pearson Education Asia,2014.
5. Mankiw N. Gregory. Principles of Economics, Thomson,2013.
6. Stiglitz J.E. and Walsh C.E. Principles of Economics, W.W. Norton & Co, New York,2011.

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- https://www.khanacademy.org/economics-finance-domain/macroeconomics
- https://www.economicsdiscussion.net/national-income/4-main-concepts-of-national-income/17241
- https://www.investopedia.com/terms/i/inflation.asp
- https://www.investopedia.com/ask/answers/100314/whats-difference-between-monetary-policy-and-fiscal-policy.asp
- https://education.nationalgeographic.org/resource/effects-economic-globalization

Course Articulation Matrix- 211237

POs / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	2	1	1	1	2	1	-	1
CO2	2	1	1	1	1	1	2	1	1	1	1	1
CO3	1	2	2	2	1	1	1	1	1	1	1	1
Weighted Average	2	1.6	1.6	1.6	1.3	1	1.3	1	1.3	1	1	1

Semester II

Course Code: 211238	**Course Title:** DSC 4: Karnataka Economy
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1 Identify the nature of economic growth and problems of Karnataka state.

CO2 Examine the process of structural growth in Karnataka Economy

CO3 Evaluate the policies and programs undertaken by the Govt. of Karnataka for bringing about socio-economic development

Units	Description	Hours
Unit - I	**Characteristics of Karnataka Economy:**	**12**
	Chapter-1: State Income State Domestic Product and PCI Measures to redress economic inequality. **Chapter-2: Human and Natural Resources** Population Human Development Index Poverty and Unemployment– Anti-Poverty and Employment generation Programmes Functioning of Panchayat Raj Institutions **Chapter-3: Natural Resources in Karnataka:** Land, Water, Forest and Mineral Resources in Karnataka Sustainable Development Goals in Karnataka Karnataka Environmental Policy Practicum: conduct field visit to Forest/Reservoir/Mining and prepare the report	2 6 4
II	**Agriculture and Industries in Karnataka:** **Chapter-4: Agriculture in Karnataka:** Importance of Agriculture Problems in Agriculture Land Reforms Cropping Pattern Irrigation Watershed Development Programme Dry Land Farming Farmers Suicide – Causes And Solutions	**18** 5

	Chapter-5: Rural Development: Regional Imbalance: Prof. D. M. Nanjundappa report Public Distribution System Rural Development Programs **Chapter 6: Industrial Development in Karnataka:** Major Industries in Karnataka - Problems and Prospects MSMEs - Problems and Measures IT Industries in Karnataka Industrial Finance in Karnataka Industrial Policy of Karnataka Practicum: visit to industrial units in local area and prepare the report/Trace-out the impact of Prof. D. M. Nanjundappa Committee report	9 4
III	**Infrastructure and Finances:**	12
	Chapter7: Economic Infrastructure in Karnataka: Transportation: Road, Rail, Water and Air Transport Information and Communication Technology Facilities **Chapter 8: Social Infrastructure:** Drinking Water, Sanitation Housing, Health and Education Health and Education, Rural Electrification **Chapter 9: State Finance:** Sources of Revenue: Direct and Indirect Taxes GST: Impact of GST State Expenditure States Indebtedness State Finance Commission Current State Budget Practicum: Discussion on State budget	3 3 6

References:

1. Government of Karnataka, Economic Survey [Various Issues]
2. Planning Department, Annual Publication, Government of Karnataka.
3. Karnataka at Glance, Annual Publication Government of Karnataka.
4. Madaiah M & Ramapriya. Karnataka Economy Growth: Issues and Development, Himalaya Pub., House, NewDelhi.
5. Adul Aziz and K.G. Vasanti. (Eds) Karnataka Economy.
6. Government District Development Reports
7. Hanumantha Rao. Regional Disparities and Development in Karnataka.
8. Krishnaiah Gowda H.R. Karnataka Economy, Spandana Publications, Bangalore
9. Nanjundappa D.M. Some Aspects of Karnataka Economy.
10. Puttaswamiah K. Karnataka Economy, Two Volumes

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- https://planning.karnataka.gov.in/storage/pdf-files/Economic%20Survey/Chapter%20Eng%2021.pdf
- https://www.britannica.com/place/Karnataka-state-India/Economy

Course Articulation Matrix - 211238

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	3	3	3	2	2	2	2	1	1	1	1
CO2	2	2	2	2	2	1	1	1	1	1	-	1
CO3	1	1	1	1	1	1	2	1	1	1	1	1
Weighted Average	1.6	2	2	2	1.6	1.3	1.6	1.3	1	1	1	1

Semester II

Course Code: 21OEECO201	**Course Title: OE2**: Contemporary Indian Economy
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1 Evaluate the LPG Concept and current problems of Indian Economy

CO2 Identify the factors contributing to the recent growth of the Indian Economy

CO3 Examine the sector specific policies adopted for achieving the rational goals & review of various economic policies adopted.

Content of Course 1	42 Hrs
Unit – 1 LPG POLICIES, ECONOMIC REFORMS AND AGRICULTURE:	**14**
Chapter No. 1 Recent Issues:	4
Concept of LPG	
India's population policy	
Demographic Dividend	
Chapter No. 2 Urbanization and governance:	4
Urbanization and Smart City Mission	
Impact of COVID-19 Pandemic	
Atma Nirbhara Bharat Abhiyan	
Chapter No. 3 Economic Reforms and Agriculture:	6
Commercialization and Diversification of Agriculture	
Public Distribution System : TPDS	
Doubling Farm Incomes -MGNREGS (brief introduction)	
Practicum	
3. Mini-project to ascertain the impact of pandemic on lives of different sections of population	
4. Field visits to understand the agrarian situation	

Unit – 2 INDUSTRY, BUSINESS, FISCAL POLICY:	**14**
Chapter No. 4. Industrial Policy: New Industrial Policy and Changes Public Sector Reforms Privatisation and Disinvestment	4
Chapter No. 5. Business: Ease of Doing Business Performance of MSMEs Role of MNC's in Industrial Development	5
Chapter No. 6. Fiscal Policy: Tax, Expenditure, Budgetary Deficits GST (meaning and features), Fiscal Federalism and Fiscal Consolidation (in brief) Recommendations of the Current Finance Commission **Practicum**: Mini-projects to assess the business climate	5
Unit – 3 MONETARY POLICY, FOREIGN TRADE AND INVESTMENT:	**14**
Chapter No. 7 Monetary Policy: Organisation of India's Money Market Financial Sector Reforms	5
Chapter No. 8. Money and Capital Markets Working of SEBI in India Changing roles of the Reserve Bank of India Foreign Banks and Non-Banking Financial Institutions Demonetization and its impact	5
Chapter No. 9. Foreign Trade and Investment: Direction of India's foreign trade Balance of payments since1991 (trends) FDI – Trends and Patterns New EXIM policy Bilateral and Multilateral Trade Agreements (in brief)	4
Practicum:	

Computation and analysis of Wholesale Price Index, Consumer Price Index: Group Discussions on India's trade policies and trade agreements	

References:

- Bardhan, P.K. (9th Edition) (1999), The Political Economy of Development in India, Oxford University Press, New Delhi.
- Bhaduri Amit, (2015), A Model of Development By Dispossession, Fourth Foundation
- Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New
- Delhi.
- Jalan, B. (1996), India's Economic Policy- Preparing for the Twenty First Century, Viking, New Delhi.
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- Mishra S.K & V.K Puri (2001) "Indian Economy and –Its development experience", Himalaya Publishing House.

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- **https://en.wikipedia.org/wiki/Smart_Cities_Mission**
- **https://prepp.in/news/e-492-new-industrial-policy-1991-indian-economy-notes**
- **https://www.jagranjosh.com/general-knowledge/population-policies-of-india-1448689756**

Course Articulation Matrix- 21OEECO201

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	2	3	3	2	2	2	2	1	1	1	2
CO2	2	2	2	2	2	1	2	1	1	1	-	1
CO3	1	1	1	1	1	-	2	1	1	1	-	1
Weighted Average	1.6	1.6	2	2	1.6	1.5	2	1.3	1	1	1	1.3

Semester II

Course Code: 21OEECO202	**Course Title: OE2**: Sustainable Development Goals
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1 Comprehend the basic concept of Sustainable Development (SD), the environmental, social and economic dimensions.

CO2 Know the history and evolution of the SD concept and discuss the conflicts which are involved in the SD concept on the national as well as on the global scale.

CO3 Examine the disadvantages of instruments involved in SD; Evaluate the sustainable development goals and their attainments.

Unit	Description	42 Hrs
I	**Development, Environment and Pollution**	**15**
	Chapter-1: Environmental Goods and Services:	3
	Relationship between Environment and Development	
	Environmental Kuznets Curve – Meaning and Evidence	
	Chapter-2: Resource Use and Management:	6
	Resource Taxonomy – Renewable and Non-renewable Resources	
	Economic Theory of Depletable Resources	
	Optimal Use of Renewable Resources	
	Resource Scarcity and Economic Growth – Limits to Growth Model	
	Tragedy of Commons and Common Property Resources	
	Resource Pricing and Resource Conservation	
	Chapter-3: Sustainable Development	6

	Sustainable Development – Meaning and Indicators Objectives and Principles Approaches and Strategies for Sustainable Development Environmental Accounting Measures **Practicum:** Mini project on the impact of local environment	
II	**Sustainable Development Goals**	**10**
	Chapter-4: Introduction and History Brundtland Committee Recommendations Rio Summit and Agenda21 SDGs: Targets and Indicators **Chapter-5: Government and the SDGs** Planning Localizing the SDGs SDG Policy Instruments Industrial Policies and the SDGs **Chapter-6: Financing the SDGs** Types of Financing New Financing Mechanisms and Global Funds Assignments on Progress in attainment of various SDGs in India and their states	3 4 3
III	**SDGs and their Achievement:**	**17**
	Chapter-7: Realizing the SDGs: De-growth and Circular Economy Sustainable Production and Consumption Sustainable Cities and Transportation Sustainable Designs, Technology, Digital Revolution and Innovation Renewable Energy **Chapter-8: Tools for SDGs Achievement:** Governance and Policy Tools Openness, Participation and Accountability Effectiveness and Coherence India's framework for Sustainable Development **Chapter-9: Other Issues in SDGs:**	8 5 4

	Social business, Civil Society Organizations (CSOs) and Operations Development Assistance Cross-Border Cooperation **Practicum:** Group Discussion on sustainable practices – other agriculture	

Suggested Readings:

1.Baumol, W.J. and W.E. Oates (1988): *The Theory of Environmental Policy* (2e), CUP, Cambridge.

2.Bhattacharya, R.N. (Ed): Environmental Economics: An Indian Perspective, OUP, New Delhi.

3.Dalby, Simon, et al. Achieving the Sustainable Development Goals: Global Governance Challenges. Routledge,2019.

4.Day, G.S., and P.J.H. Schoemaker (2011), Innovating in uncertain markets: 10 lessons for green technologies, MIT Sloan Management Review, 52.4:37-45.

WEB LINKS:

- **https://www.undp.org/sustainable-development-goals**
- **https://testbook.com/learn/development-and-environment**
- **https://www.elsevier.com/journals/sustainable-cities-and-society/2210-6707/guide-for-authors**
- **https://sdgresources.relx.com/tools**
- **https://en.wikipedia.org/wiki/Cross-border_cooperation**

Course Articulation Matrix- 21OEECO202

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	2	2	2	2	1	3	2	1	1	-	1
CO2	2	-	-	-	1	2	2	2	1	1	-	-
CO3	2	2	1	2	2	2	2	2	1	1	1	-
Weighted Average	2	2	1.5	2	1.6	1.6	2.3	2	1	1	1	1

Semester II

Course Code: 21OEECO203	**Course Title: OE2**: Economics of Business Environment:
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

At the end of the course the student should be able to:

CO1 Examine the elements and concepts of Business Environment.

CO2 Identify the environmental constraints in the growth of a business firm.

CO3 Analyze the ways to utilize the current environmental conditions to achieve higher growth in the field of Business.

Unit	Content of Course:	42 Hrs
I	**Introduction to Business Environment:**	**12**
	Chapter-1: Introduction:	3
	Definition, Objectives, Importance of Business Environment.	
	Strategies of Business Environment	
	Business Environment Determinants	
	The Micro Environment of Business and The Macro Environment of Business.	
	Chapter-2: Economic Environment:	6
	Meaning of Economic Environment	
	Impact of Liberalization Privatization & Globalization (LPG) on Indian Business Environment.	
	Monetary policy – Meaning and Objectives	
	Fiscal policy – Meaning and Objectives	
	EXIM policy – Meaning and Objectives	
	Industrial policy – Meaning and Objectives (Latest Policy Measures).	
	Chapter-3: Global Business Environment:	3
	Meaning	
	Globalization: Nature and Impact of Globalization	
	Challenges of International Business	
	WTO and its Implications on Indian Economy.	
	Practicum	
	1. Group discussion on WTO and its impact on Indian business	

II	**Non-Economic Environment:**	**16**
	Chapter-4: Social and Cultural Environment: Business and Society Social Objectives of Business Corporate Social Responsibility Consumer Rights & Corporate Governance Business Ethics	5
	Chapter-5: Technological Environment: Meaning Technological Changes – R & D in India Public and Private Investment in R and D.	5
	Chapter-6: Financial Environment: Introduction and Meaning An Overview of Indian Financial System Financial Institutions and their Roles Role of Foreign Direct Investment and its impact on Indian Business **Practicum:** Students are expected to analyze the major economic and financial indicators such as GDP/BSE/NSE and submit the report .	6
III	**Governance and Business in India:**	**14**
	Chapter-7: Political Environment: Introduction and Meaning Political Environment and the Economic System Provisions of Indian Constitution for Business	4
	Chapter-8: Legal Environment of Business: Indian Company Law Competition policy and law Patents &Trademarks Industrial Policy- an overview Labour Laws & Social Security, Environmental Laws.	4
	Chapter-9: Current Issues in Environmental Business: Ease of Doing Business Performance of MSMEs	6

	Make in India Development of Economic and Social Infrastructure National Monetization Pipeline (The teacher should include the latest policy of the government) **Practicum:** Students are expected to give a report on how the economic environment has affected the performance of any one of the large Indian Business Houses.	

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1. Francis Cherunilam: Business Environment, Himalaya Publishing House, Mumbai.
2. K. V. Sivayya and VBM Das: Indian Industrial Economy, Sulthan Chand Publications, Delhi.
3. M. Adhikari: Economic Environment of Business, Sulthan Chand and Sons, New Delhi. Raj
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WEB LINKS:

- **https://www.toppr.com/guides/business-environment**
- **https://www.marketingtutor.net/economic-factors-affect-business-environment**
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- **https://www.mca.gov.in/MinistryV2/easeofdoingbusiness.html**
- **https://www.india.gov.in/spotlight/national-monetisation-pipeline-nmp**

Course Articulation Matrix- 21OEECO203

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	3	1	1	1	2	2	2	1	1	1	2	2
CO2	2	2	2	2	2	1	2	1	2	1	2	2
CO3	3	2	2	2	3	1	2	3	2	1	2	1
Weighted Average	2.6	1.6	1.6	1.6	2.3	1.3	2	1.6	1.6	1	2	1.6

Continuous Internal Evaluation and Semester Examination

Total marks for each course shall be based on continuous assessments and term end examinations. As per the decision of the Karnataka State Higher Education Council, it is necessary to have uniform pattern of 40:60 for CIA and Semester End examinations respectively, among all the Universities, their affiliated and autonomous colleges.

The committee deliberated on the same and suggested the following pattern for the CIE Marks.

Sl. No.	**Parameters for the Evaluation**	Marks
	Continuous Internal Evaluation (CIE)	
A	**Continuous & Comprehensive Evaluation (CCE)**	**20**
B	**Internal Assessment Tests (IAT)**	**20**
	Total of CIE (A+B)	**40**
C	**Semester End Examination (SEE)**	**60**
	Total of CIE and SEE (A+B+C)	**100**

Outline for continuous assessment activities for C1 and C2

Activities	**C1**	**C2**	**Total Marks**
Session Test	10 marks	10 marks	20
Case study / Assignment / Field work / Project work/ Academic Quiz/ Review of the Book/ etc.	10 marks	---	10
Case study / Assignment / Field work / Project work/ Academic Economics Quiz/ Review of the Book/ etc	---	10 marks	10
Total	20 marks	20 marks	40

QUESTION PAPER PATTERN FOR C3 (DSC&OE Papers)

Maximum Marks: 60 **Duration:** $2\frac{1}{2}$ **Hours**

PART -A

Answer any Five of the following: **5X2 =10**

Sl. No. 1

a.
b.
c.
d.
e.
f.
g.
h.

PART - B

Answer any Six of the following: **6X5 =30**

Sl. No. 2 to 10

PART - C

Answer any Two of the following: **2X10 =20**

Sl. No. 11 to 14

Mahajana Education Society (R)

Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

Department of Economics

BoS meeting of the Department of Economics was held on 17.09.22 at 11.00 am in AVC-1. Necessary changes and modifications for the Syllabi of I and II Semester BA have been incorporated and some minor changes have been made in the syllabi of III & IV Semester BA as instructed by University of Mysore and as per the NEP- 2020 Guidelines. Proposed List of the Examiners for the academic year 2022-23 was placed before the members. The same was approved by the following BoS Members.

Board of Studies - Department of Economics

Sl. No.	Designation	Name	Signature
01	University Nominee	**Dr. Navitha Thimmaiah,** Associate Professor DoS in Economics & Cooperation, UoM, Mysuru.	Navitha Thimmaiah 17/09/2022
02	Subject expert	**Dr. Ramakrishna B M** Associate Professor University college Hampanakatta (Constituent college of Mangalore University) Mangaluru-575001	17/9/22
03	Subject expert	**Dr. E. Thippeswamy** Associate Professor, Field Marshal K. M. Cariappa College (Constituent college of Mangalore University) Madikeri-571201	Thippeswamy 17/09/22
04	HoD & Faculty Member	**Venkatalakshmi M N** Associate Professor, SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	Venkatalakshmi M N
05	Faculty Member	**Dr. Pushparani P G** Assistant Professor SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	— ABSENT —

06	Faculty Member	**Siddappa R** Assistant Professor SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	
07	Faculty Member	**Chaluvegowda S M** Assistant Professor SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	
08	Subject Expert & Alumnus	**Dr. Roopa Patavardhan** Assistant Professor School of Business studies and Social Sciences, Christ(Deemed to be University) Hulimavu, Bengaluru-76	
09	Industry Person	**Nikhil Maruthi** Stake Holder LLP Partner,Solution Infinite Media Pvt.Ltd, T-301, Chicago Avenue, Cunningham Road,Opp.Fortis Hospital, Bengaluru-560001	ABSENT

Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Affiliated to University of Mysore &Accredited by NAAC with A Grade

College with potential for excellence

Jayalakshmipuram, Mysuru - 570 012

BOARD OF STUDIES (BoS)

DEPARTMENT OF ECONOMICS

UG [√]

PG [ ]

NEP Syllabi for III and IV Semester BA Economics

2022-23

DEPARTMENT OF ECONOMICS

Motto

Economics for Empowerment and Enhancement

Vision

To prepare Students for successful careers as applied economists

Through fine tuning of minds & to make them understand and analyze the dynamics of Economic changes

Mission

Providing a sound theoretical base to develop quantitative aptitude, to substantiate theoretical learning

Exposure to practical aspects of Present day economic challenges

POs	Details of the Programme Outcomes (POs)
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Department of Economics - List of Board of Studies Members

Sl. No.	Category	Name	Designation	Address for communication	E-mail and Mobile No.
01	**University Nominee**	**Dr. Navitha Thimmaiah**	Associate Professor	DoS in Economics & Cooperation, UoM, Mysuru.	navithaprasad@gmail.com +919036180571
02	**HoD & Faculty of the Department**	**Venkatalakshmi M N**	Associate Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	venkatalakshmimn.fgc@mahajana.edu.in +91 9448472024
		Dr.Pushparani P G	Assistant Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru - 12	pushparanimfgc@gmail.com +91 9945094843
		Siddappa R	Assistant Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru - 12	mnsh1611@gmail.com +91 8050365338
		Chaluvegowda S M	Assistant Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru - 12	Chaluvegowda25@gmail.com +918217310214
03	**Two Experts from other University**	**Dr. Ramakrishna B M**	Associate Professor	University college,Hampanakatta, (A Constituent college of Mangalore University) Mangaluru-575001	rama_bmr@yahoo.co.in +91 9448427705
		Dr. E. Thippeswamy	Associate Professor	Field Marshal K. M. Cariappa College, (A Constituent college of Mangalore University) Madikeri-571201	ethippeswamy@yahoo.com +91 9448639972
04	**Alumnus**	**Dr. Roopa Patavardhan**	Alumnae & Assistant Professor	School of Business studies and social sciences, Christ (Deemed to be University)Hulimavu, Bengaluru-76	roopa.patavardhan@christuniversity.in +91 9901997086
05	**Industry Expert**	**Nikhil Maruthi**	Stakeholder & LLP Partner	Merako Media Pvt Ltd Mysuru	Nikhilmaruthi26@gmail.com +91 9650266082

Year-wise Programme Structure (NEP 2020)

Discipline Specific Courses (DSC) and Open Elective (OE)
III & IV SEM

Course, Type, Code and Title		Hour/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L: T:P	C1	C2	C3		Marks
Economics – III Sem									
DSC-5 221337	Micro Economics	**3**	**0**	**3:0:0**	**20**	**20**	**60**	$2\frac{1}{2}$ **Hours**	**100**
DSC-6 221338	Mathematics for Economics	**3**	**0**	**3:0:0**	**20**	**20**	**60**	$2\frac{1}{2}$ **Hours**	**100**
OE-3	1.Rural Economics 22OEECO301 2. Economics of Insurance 22OEECO302 3. Economics of Human Development 22OEECO303 **(Any one to be opted)**	**3**	**0**	**3:0:0**	**20**	**20**	**60**	$2\frac{1}{2}$ **Hours**	**100**
Course, Type, Code and Title		**Hour/ Week**		**Credits**	**Maximum Marks**			**Exam Duration**	**Total**
					IA		**Exam**		
		L	**T/P**	**L: T:P**	**C1**	**C2**	**C3**		**Marks**
Economics – IV Sem									
DSC-7 221437	Macro Economics	**3**	**0**	**3:0:0**	**20**	**20**	**60**	$2\frac{1}{2}$ **Hours**	**100**
DSC-8 221438	Statistics for Economics	**3**	**0**	**3:0:0**	**20**	**20**	**60**	$2\frac{1}{2}$ **Hours**	**100**
OE-4	1. Karnataka Economy 22OEECO401 2. Entrepreneurial Economics 22OEECO402 3. Economics and Law 22OEECO403 4. Economics of GST 22OEECO404 **(Any one to be opted)**	**3**	**0**	**3:0:0**	**20**	**20**	**60**	$2\frac{1}{2}$ **Hours**	**100**

III Semester BA

Course Code: 221337	**Course Title:** DSC 5: Micro Economics
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Recognize & illustrate the Micro economic concepts, basic supply and demand analysis with Determinants of Demand and Supply

CO2. Examine the structure and the role of costs in the economy and describe, using graphs, various market models to examine structure of both perfect and Imperfect competitions

CO3. Evaluate as to how equilibrium is achieved in the various market models, Identify problem areas in the economy, and possible solutions, using the analytical tools developedin the course.

Contents	**42 Hrs**
Unit–1: Basics of Microeconomics	**6**
Chapter:1 Exploring Microeconomics: Nature and scope of economics – Opportunity cost, Scarcity, Production possibility frontier - Market system as a way to organise economic activities	3
Chapter:2 Supply and Demand: Law of demand, Demand schedule and Exceptions to Law of Demand, Law of supply; supply schedules and shifts in the demand and supply curves.	3
Practicum: ➢ Reading and working with graphs ➢ Estimation of elasticity and discussing its applications; solving problems to estimate the equilibriumprice and quantity	
Unit -2: Consumption Decisions	**5**
Chapter 3 **The Households:** Diminishing marginal utility; Indifference curves – Meaning and properties;Budget constraint; Maximization of satisfaction; Price, Income and Substitution effects;	
Practicum: Conducting a consumer survey to understand their tastes and preferences	

Unit -3: Production and Costs	**8**
Chapter 4: The Firms: Concept of firm and industry; Production function; Law of variable proportions; iso-quant and iso-cost lines, cost minimizing equilibrium condition; Meaning of Cobb-Douglas production function	5
Chapter 5: Cost of Production: Short run and long run costs; Returns to Scale.(diminishing,constant and increasing)	3
Practicum: ➢ Analysing reasons for diminishing marginal returns ➢ Examining the relationship between cost and output/ Deriving cost functions from output functions	
Unit -4: Pricing	**13**
Chapter 6: The Markets: Meaning of market structure and Types; Pricing under perfect competition; Monopoly pricing and price discrimination; Monopolistic competition –Oligopoly, Interdependence, Collusive and non-collusive oligopoly;	7
Chapter 7: The Inputs (Factors): Functional and Personal income; Demand for and supply of factors; Marginal productivity theory of distribution; Meaning and determinants of rent, wages, interest and profits.	6
Practicum: ➢ Conducting Market Survey to identify the nature and features of markets for different goods/services ➢ Understanding distribution of national income as factor incomes	
Unit -5: Welfare Economics	**6**
Chapter 8: Welfare Economics: Meaning of welfare; Pigou's welfare economics; Compensation principle; Impediments to attain maximum social welfare;	
Practicum: Examining day to day externalities and proposing solutions to them	
Unit -6: Economics in Action	**4**
Chapter 9: Economic Theory and Policy: Basics of monetary and fiscal policies; controls and regulations; incentives and penalties;	
Practicum: Analysis of latest budget of the Central Government; Review of terminology used in thelatest Monetary Policy of the RBI	

Note: Strictly follow the Practicum

References	
1	Ahuja, H.L. (2008): *Principles of Microeconomics*, S. Chand and Co., New Delhi
2	Mankiw, N. Gregory (2020). *Principles of Economics* (Ninth ed.). Boston, MA.
3	Jhingan, M.L. (2016): *Microeconomics*, Vrinda Publications, New Delhi
4	Koutsoyianis, A (1979): *Modern Microeconomics,* London, Macmillan
5	Omkarnath, G. (2012: *Economics: A Primer for India*, Orient Blackswan, Hyderabad
6	Samuelson, Paul (2004): *Economics*, McGraw-Hill, New Delhi
7	Krishnaiahgouda H.R. (2020): Micro Economics,Sapna Book House, Bengaluru, Micro Economics
8	Somashekhar Ne. Thi., Micro Economics Sidhlingeshwara Prakashana, Kalburgi.

Weblinks:

- https://www.investopedia.com/terms/m/microeconomics.asp
- https://www.britannica.com/topic/supply-and-demand
- https://en.wikipedia.org/wiki/Marginal_utility
- https://people.stfx.ca/tleo/Production_1.pdf
- https://www.investopedia.com/terms/w/welfare_economics.asp
- https://byjus.com/commerce/forms-of-market

Course Articulation Matrix- 221337

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	**3**	**2**	**1**	**1**	**1**	**2**	**2**	**-**	**-**	**1**	**2**	**1**
CO2	**2**	**2**	**2**	**2**	**1**	**2**	**2**	**1**	**1**	**1**	**2**	**1**
CO3	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**1**
Weighted Average	**2.3**	**2**	**1.6**	**1.6**	**1.3**	**2**	**2**	**1**	**1**	**1**	**1.6**	**1**

Semester –III

Course Code: 221338	**Course Title:** DSC 6: Mathematics for Economics
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Acquire the knowledge of mathematical tools and their application to Economic Concepts; Perform the basic operations in Sets and Matrices.

CO2. Calculate limits, derivatives of Economic functions and identify the nature of relationship among Costs and Revenue curves.

CO3. Computation of maxima and minima of functions through integral and differential calculus.

Contents	42 Hrs
Unit–1: Preliminaries	**12**
Chapter:1 - Introduction to Mathematical Economics: Nature and scope of mathematical economics- Role of mathematics in economic theory	4
Chapter:2 - Number system and Set theory: Types of Numbers: Natural Number, Real number, integers, Irrational number, Complex number. Concepts of sets- meaning –types- union of sets – interaction of sets.	4
Chapter:3 - Functions: Meaning of function- Types of functions: Linear Function: Derivation of Supply and Demand Functions through Two Point Formula. Non-Linear Functions: Quadratic Functions	4
Unit -2: Economic Functions, their Application and Matrices	**14**
Chapter 4 Economic Functions: Demand function, Supply function, Production function,Cost, Revenue and Profit function, Consumption function	4
Chapter-5: Applications of Functions: Graph of economic functions, Market equilibrium; Equilibrium price and quantity, Impact of specific tax and subsidy on market equilibrium	5
Chapter-6: Matrices: Definition and Types of matrices- Matrix operations: Addition, Subtraction and Multiplication, Transpose of a matrix, Determinants of matrix- Cramer's rule	5

Unit -3: Differential Calculus and Its Applications	16
Chapter 7- Limits: Limits of functions, differentiation and rules of differentiation.	4
Chapter 8 Derivatives of Economic functions: Derivation of marginal functions from total function-Marginal production, Marginal cost, Marginal revenue and Marginal profit.	6
Chapter 9 - Applications of Derivatives and Higher order derivatives: Elasticity of demand-Second order derivatives- Maxima and Minima of economic function.	6

References	
1	Chiang, A. C. and Wainwright, K., (2005) *"Fundamental Methods of Mathematical Economics",* McGraw-Hill/Irwin, 4th Edition.
2	Allen R.G.D., (2015) *Mathematical Analysis for Economists,* Macmillan.
3	Bose D., (2003) *An Introduction of Mathematical Economics*, Himalaya Publishing House, Mumbai.
4	Dowling, E. T., *"Introduction to Mathematical Economics"*, McGraw-Hill, 2001.
5	Hoy, M., Livernois, J. McKenna, C, Rees, R. and Stengos, T., *"Mathematics for Economics",* MIT Press, 3rd Edition, 2011
6	Veerachamy R (2005) *Quantitative Methods for Economics*, New Age International Publishers Private Ltd. New Delhi.
7	S. N. Yogish, (2005) *Mathematical methods for Economists*- Mangaldeep publications, Jaipur.

Web links:

- https://www.investopedia.com/terms/m/mathematical-economics.asp
- https://en.wikipedia.org/wiki/Set_theory
- https://byjus.com/maths/determinant-of-a-matrix/
- https://www.indeed.com/career-advice/career-development/how-to-calculate-equilibrium-price
- https://byjus.com/maths/derivative-function-calculus/

Course Articulation Matrix-221338

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	1	2	1	2	1	1	1	1	1	1	1
CO2	2	3	2	1	2	1	1	-	2	1	2	1
CO3	2	3	2	1	2	1	1	-	1	1	1	1
Weighted Average	2	2.3	2	1	2	1	1	1	1.3	1	1.3	1

III SEMESTER

Course Code: 22OEECO301	**Course Title:** OE 3: Rural Economics
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1 Identifying the basics of rural development, study the characteristics, problems, and programs of rural redevelopment

CO2 Evaluate the trends and patterns of economic activities in rural areas

CO3 Examine the role of infrastructural facilities and governance in rural development and enable the students to know about significance of rural enterprises and agriculture.

Contents	42 Hrs
Unit–1:	**14**
Chapter:1 - Introduction to Rural Economy : Meaning and objectives of rural economy-Characteristics of Rural Economy-Indicators of rural development- Concepts of inclusive and sustainable development	5
Chapter:2 - Approaches to Rural Development Gandhian model: Community development approach, Minimum needs approach, Integrated ruraldevelopment and Inclusive growth approach.	4
Chapter:3 - Poverty and Unemployment in Rural India Meaning and measurement of poverty - Causes of poverty - Farm and non-farm employment Measurement and types of employment - Review of poverty alleviation and employment generation programs in India.	5
Practicum: • Field visit to nearby village and study the poverty situation • Field visit to village and study the employment pattern • Undertake evaluation study on employment generation programmes and prepare an assignment.	
Unit -2:	**14**
Chapter 4- Rural Enterprises Meaning and importance, Classification of MSME - Progress and problems of MSME Khadi and	5

village industries	
Chapter-5: Rural Banking and Finance Credit co-operative societies-Regional rural banks - Role of NABARD- Microfinance institutions	4
Chapter-6: Rural Infrastructure Educational and health Infrastructure-Housing and sanitation, Drinking water supply - Rural transport and communication rural electrification	5
Practicum: • Write an assignment on Rural infrastructure • Write a small report on Rural Industry	
Unit -3:	**14**
Chapter 7- Rural Development Programmes Wage employment programmes- Self-employment and entrepreneurship development programs - Rural housing programs - Rural sanitation programs	4
Chapter 8 - Rural Markets Meaning and types of rural markets- Defects and government measures for removal of defects in rural markets-Co-operative marketing societies - Meaning and importance of regulated markets-digital marketing(e-MAN).	5
Chapter 9 - Rural Governance Legislations powers, functions and sources of revenue of panchayat raj institutions-Role of NGOs in rural development - People's participation in rural development	5
Practicum: • Group Discussion on Rural Governance • Interview Gram Panchayat members and prepare brief note on their participation in rural development. Undertake evaluation study on rural development programmes and prepare an assignment.	

	References
1	Chambers, R. (1983*): Rural Development: Putting the Last First*, Longman, Harlow.
2	Dandekar, V.M. and N. Rath (1971): *Poverty in India*, GIPE, Pune.
3	Dantwala, M. L. (1973): *Poverty in India: Then and Now, 1870-1970*, Macmillan, Bombay.
4	Gupta. K .R. (Ed) (2003): *Rural Development in India,* Atlantic Publishers and Distributors, New Delhi.
5	Jain, Gopal Lal (1997): *Rural Development,* Mangal Deep Publications, Jaipur,
11	Tyagi, B. P. (1998): *Agricultural Economics and Rural Development*, Jai Prakash Math and Co., Meerut
12	Somashekar Ne. Thi. (2022) *Rural Development* Siddalingeshwara publication, Kalburgi.
13	H. R. Krishnaiah Gowda (2022) , *Rural Development,*Mysore book house publication, Mysore.

Web links:

- https://www.yourarticlelibrary.com/economy/rural-economy-in-india-meaning-and-features-of-rural-economy/34950
- https://www.egyankosh.ac.in/bitstream/123456789/59479/1/Unit5.pdf
- https://rbidocs.rbi.org.in/rdocs/Speeches/PDFs/STE06052013F.pdf
- https://www.adda247.com/defence-jobs/rural-development-programs-of-india/
- https://www.rural21.com/english/news/detail/article/rural-governance-a-precondition-for-inclusive-and-sustainable-rural-transformation.html

Course Articulation Matrix - 22OEECO301

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	3	2	2	2	2	3	3	2	2	1	1	1
CO2	3	2	2	2	1	2	2	2	2	1	-	1
CO3	2	2	2	1	2	3	2	2	2	1	2	1
Weighted Average	2.6	2	2	1.6	1.6	2.6	2.3	2	2	1	1.5	1

III SEMESTER

Course Code: 22OEECO302	**Course Title:** OE 3: Economics of Insurance
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Gain knowledge relating to fundamentals and types of the insurance in the field of insurance

CO2. Examine the role of Insurance planning and tax advantages and Dis advantages

CO3. Acquiring Knowledge in Health insurance, Insurance plans and legislations involved.

Contents	42 Hrs
Unit–1: Introduction to Economics of Insurance	**17**
Chapter:1 - Fundamentals of Economics of insurance Definition of insurance - Scope of economic of insurance - Importance of insurance	6
Chapter:2 - The conceptual framework Brief history of insurance - Perils and risks in insurance, Classification of risks hazards - Howinsurance works - Classes of insurance and assumptions	6
Chapter:3 - Type of Insurance Risk pooling and risk transfer in insurance - Social vs private insurance - Life vs non-lifeinsurance	5
Unit -2: Insurance Planning	**12**
Chapter 4- Types of Insurance Planning Wealth accumulation plan and lifecycle planning - Tax advantage and tax non-advantage	4
Chapter-5: Retirement Planning Essential of individual retirement planning - Investing pension plan, basic principles of pensionplans - Pension plans in India.	4
Chapter-6: General Insurance Structure concept of General Insurance - Types of General Insurance, Marine Insurance, Motors Insurance,Agricultural Insurance - Fire Insurance, Personal Accident Insurance.	4
Unit -3: personal insurance / Health Insurance	**13**
Chapter 7- Essential of Life and Health Insurance Fundamentals of Life and Health Insurance, functions of Life and Health Insurance HealthInsurance and Economic Development, Insurance and Farmer Security	4

Chapter 8 - Insurance Documentation Health Insurance products, Health Insurance underwriting - Health Insurance claims.	4
Chapter 9 - Insurance Legislation The insurance act, 1938- Registration- Accounts and Returns-Investments -Limitation on expenseof Management - Regulation of Insurance, Insurance regulation in India, role and need of regulation, history of insurance regulation in India - Insurance Reforms Development Authority (IRDA), performance of IRDA - Indian Insurance in global platform, future potential in Indian Insurance Business.	5

References	
1	Chambers, R. (1983): *Rural Development: Putting the Last First*, Longman, Harlow.
2	Dandekar, V.M. and N. Rath (1971): *Poverty in India,* GIPE, Pune.
3	Dantwala, M. L. (1973): *Poverty in India: Then and Now, 1870-1970*, Macmillan, Bombay.
4	Gupta. K .R. (Ed) (2003): *Rural Development in India*, Atlantic Publishers and Distributors, NewDelhi.
5	Jain, Gopal Lal (1997): *Rural Development*, Mangal Deep Publications, Jaipur,
6	Singh, Katar (1986): *Rural Development: Principles, Polices and Management*, Sage Publications,NewDelhi, (Second Edition).

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- **https://link.springer.com/book/10.1007/978-3-642-20548-4**
- **https://cleartax.in/s/insurance**
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- **https://ssrana.in/corporate-laws/insurance-law/**

Course Articulation Matrix - 22OEECO302

POs **COs**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**P09**	**PO10**	**PO11**	**PO12**
CO1	1	1	-	-	1	1	1	1	-	1	-	-
CO2	1	-	-	-	1	1	-	2	1	1	1	1
CO3	1	1	1	-	1	1	1	2	-	1	1	1
Weighted Average	1	1	1	-	1	1	1	1.6	1	1	1	1

III SEMESTER

Course Code: 22OEECO303	**Course Title:** OE 3: Economics of Human Development
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Differentiate between Human Resource Development (HRD), Human Development (HD) and HRM

CO2. Comprehend the concepts of Human security, describe dimensions of human development, and various practices and policies of human development

CO3. Measurement of human development and analysis of the impact of globalization on Human Development

Contents	42 Hrs
Unit–1: Introduction to Human Development	**12**
Chapter 1: Human growth and human development - Basic needs approach - Quality of lifeapproach - Capability approach	04
Chapter 2: Human resource development (HRD), Human resource management (HRM).	04
Chapter 3: Human Development: meaning and definition, importance, and objectives.	04
Unit -2: Human Security, SDGs and Approaches to Human Development.	**12**
Chapter 4: Human Security: Economic security - Food security - Health security - Environmental security - Personal security - Community security - Political security.	04
Chapter 5: Sustainable Development Goals (SDGs): Understanding the SDGs - Linkages between human development and the SDGs.	04
Chapter 6: Indian Perspectives and Experience with Human Development: Approachto human development in national plans	04
Unit -3: Dimensions and Measurement of Human Development	**18**

Chapter 7: Dimensions of Human Development: Empowerment - meaning and usage, Cooperation - definition and brief introduction, Equity - concept and usage, Sustainability – meaning and importance, Participation - concept, different forms of participation, Human development & Productivity - factors determining productivity.	06
Chapter 8: Measuring Human Development: Need for indices - limitations of per capita GDP as an indicator. Earlier indices (meaning): - Physical Quality of Life Index (PQLI), - Disability Adjusted Life Years (DALYs), - Social Capability Index. Human Development Index - HDI as compared to per capita GDP - Method of computing HDI - Critique of HDI. Other indices (meaning): Human Poverty Index (HPI)- Gender-related Development Index (GDI) - Gender Empowerment Measure (GEM).	08
Chapter 9: Selected Issues in Human Development: Impact of Globalisation on Human Development - Trade and Human Development. - Technology and Human Development	04

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14. Viramani, B.R and Rao, Kala: *Economic Restructuring, Technology Transfer and Human Resource Development,* Response Books, New Delhi

15. United Nations Development Programme (2005); '*Course Curriculum on Human Development-An Outline'*, New Delhi

Web links:	
1	https://www.undp.org/sustainable-development-goals?c_src=CENTRAL&c_src2=GSR
2	https://hdr.undp.org/en/2020-report
3	https://www.un.org/millenniumgoals/
4	https://www.undp.org/india/publications/national-human-development-report-india
5	https://www.sdgfund.org/mdgs-sdgs

Course Articulation Matrix -22OEECO303

POs / **COs**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**P09**	**PO10**	**PO11**	**PO12**
CO1	2	1	1	1	1	1	1	1	1	1	-	1
CO2	1	1	1	1	1	1	1	1	1	1	1	1
CO3	2	1	1	1	1	1	1	2	1	1	-	1
Weighted Average	1.6	1	1	1	1	1	1	1.3	1	1	1	1

Continuous Internal Evaluation and Semester Examination

Total marks for each course shall be based on continuous assessments and term end examinations. As per the decision of the Karnataka State Higher Education Council, it is necessary to have uniform pattern of 40:60 for CIE and Semester End examinations respectively, among all the Universities, their affiliated and autonomous colleges.

The committee deliberated on the same and suggested the following pattern for the CIE Marks.

Sl. No.	**Parameters for the Evaluation**	Marks
	Continuous Internal Evaluation (CIE)	
A	**Continuous & Comprehensive Evaluation (CCE)**	**20**
B	**Internal Assessment Tests (IAT)**	**20**
	Total of CIE (A+B)	**40**
C	**Semester End Examination (SEE)**	**60**
	Total of CIE and SEE (A+B+C)	**100**

Outline for continuous assessment activities for C1 and C2

Activities	**C1**	**C2**	**Total Marks**
Session Test	10 marks	10 marks	20
Case study / Assignment / Field work / Project work/ Academic Quiz/ Review of the Book/ etc.	10 marks	---	10
Case study / Assignment / Field work / Project work/ Academic Economics Quiz/ Review of the Book/ etc	---	10 marks	10
Total	20 marks	20 marks	40

QUESTION PAPER PATTERN (C3) FOR DSC & OE PAPERS

Maximum Marks: 60 **Duration:** $2\frac{1}{2}$ Hours

PART -A

Answer any Five of the following: **5X2 =10**

Sl. No. 1

a.
b.
c.
d.
e.
f.
g.
h.

PART - B

Answer any Six of the following: **6X5 =30**

Sl. No. 2 to 10

PART - C

Answer any Two of the following: **2X10 =20**

Sl. No. 11 to 14

IV SEMESTER

Course Code: 221437	**Course Title:** DSC 7:Macro Economics
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Gain the Knowledge about classical and Keynesian Employment Theories and National Income Accounting

CO2. Examine the process of Consumption and Investment Functions

CO3. Evaluate the Concept of Multiplier, Accelerator along with money supply, Demand and Inflation

Content	42 Hrs
Unit–1: Theory of National Income Determination	**14**
Chapter:1 Classical Framework: Typical Features of classical theory of employment; Assumptions- Basis of Classical theory: Say's Law, Pigou's wage price flexibility, Fisher's quantity theory of money, Knut Wicksell's loanable funds theory, Criticism of classical theory	7
Chapter-2: **The Keynesian Framework** Introductory: connecting growth of national income to development; why incomes of all fall or rise? Are income, output, and employment related? Some basic concepts: The idea of equilibrium and identity; ex- ante and ex-post concepts. Aggregate demand and its components. Consumption function: Marginal and Average propensity to consume. Investment function; savings and investment relationship. Aggregate Supply: Meaning and graphical explanation; Effective demand. Determination of national income in Keynes' two sector economy with Aggregate Demand and Aggregate Supply Determination of national income in Keynes' two sector economy with investment and savings.	7

Unit -2: Aggregate Consumption and Investment	**15**
Chapter-3: Theories of Determinants of Consumption: Keynesian psychological law of consumption; determinants and permanent income hypothesis ofMilton Friedman	5
Chapter-4: Investment and Savings Types of investment-Determinants of investment: rate of interest and marginal efficiency of capital: meaning and determinants-Savings and its determinants	5
Chapter-5: Concepts of Multiplier and Accelerator Investment Multiplier: Meaning and assumptions. multiplier; leakages;	5
Unit -3: Monetary Economics	**13**
Chapter-6: Money Supply: Concept of Money Supply; recent measures of money supply as suggested by RBI - Determinants of money supply: high powered money and money multiplier. The reserve ratio and deposit multiplier	5
Chapter-7: Money demand: 1. Cash transactions approach (only meaning) and Cambridge approach (Only Marshall'sequation) -The liquidity preference approach of Keynes	4
Chapter-8: Inflation and Unemployment: Phillips Curve and Wage cut theory and employment	4

References

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2	Ahuja H (2016), Macro Economics- theory and policy, S Chand and Co
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7	Somashekar Ne. Thi., Principles of Macroeconomics, Scientific International Pvt. Ltd., PublicationsNew Delhi
8	Somashekar Ne. Thi.,Samagra Artha Shastra,, Siddalingeshwara prakashana, Kalburgi.
9	H. R. Krishnaiah Gowda, Samagra Artha Shastra „ Mysore book house prakashna, Mysore.

Web links:

- https://www.economicsdiscussion.net/national-income/determination/theory-of-determination-of-national-income-economy/26030
- http://ppup.ac.in/download/econtent/pdf/keynesiantheoryofincomedetermination-140303110359-phpapp02.pdf
- https://www.microeconomicsnotes.com/investment/multiplier-and-accelerator-in-economics-working-equational-model-and-limitations/16056
- https://www.economicsdiscussion.net/money/demand-for-and-supply-of-money-discussed/1853

Course Articulation Matrix - 221437

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	2	2	1	1	1	1	2	1
CO2	3	1	-	-	2	2	1	1	-	1	1	1
CO3	3	2	2	2	2	2	1	-	1	1	1	1
Weighted Average	3	1.6	1.5	1.5	2	2	1	1	1	1	1.3	1

IV SEMESTER

Course Code: 221438	**Course Title:** DSC 8: Statistics for Economics
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1 Identify the nature and Sources of Data and their presentation

CO2 Calculate Descriptive statistics like measures of central tendency and dispersion

CO3 Apply statistical techniques like correlation and regression in the study of Economic analysis

Content of Theory	42 Hrs
Unit–1: Preliminaries	**12**
Chapter:1 Introduction to Statistics: Meaning and importance of statistics, functions of statistics, types of statistics: descriptive statistics and inferential statistics-variables; qualitative variable and quantitative variable	4
Chapter-2: Data types, sources and collection of data: qualitative and quantitative data - cross section data, time series data and panel data - primary and secondary sources of data – methods of collecting primary data	4
Chapter-3: Tabulation and presentation of data: classification and tabulation of data - frequency distributions – continuous and discrete frequency distribution. graphical presentation-histogram- frequency polygon - Ogive curves -bar diagram, pie chart	4
Unit -2: Measures of Central Tendency and Dispersion	**14**
Chapter-4: Arithmetic Average: Definition of central tendency, types of central tendency: Arithmetic mean: meaning and properties of arithmetic mean – computation of arithmetic mean	5
Chapter-5: Positional Averages-Median and Mode: Definition and importance of median-calculation of median- definition and importance of mode - calculation of mode.	4

Chapter-6: Dispersion: Meaning of dispersion- measures of dispersion- range-quartiledeviation- mean deviation - standard deviation - coefficient of variation and their computation.	5
Unit -3: Correlation, Regression and Time Series Analysis	**16**
Chapter-7: Correlation: Meaning of correlation - types of correlation - methods of measuringcorrelation- Karl Pearson's correlation coefficients.	5
Chapter-8: Regression: Meaning and importance of regression - regression equation -estimation of regression equation - applications of regression equation in economics.	6
Chapter-9: Time Series Analysis: Definition of time series – components of time series –estimation and forecasting of trend.	5

References	
1	Gupta S P. (2012) *Statistical Methods*, S. Chand and Company, New Delhi.
2	S. C. Gupta, (2018) (New edition) *Fundamentals of Statistics*, Himalaya publishing house, Mumbai.
3	S. N. Yogish, (2007) *Statistical methods for Economists*- Mangaldeep publications, Jaipur.
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- https://www.simplilearn.com/what-is-data-collection-article
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- https://www.cuemath.com/data/correlation-and-regression/

Course Articulation Matrix-221438

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	3	3	3	2	1	1	1	1	1	1	1
CO2	2	2	2	2	2	1	-	-	2	1	1	1
CO3	2	2	2	2	1	-	-	-	1	1	1	1
Weighted Average	2	2.3	2.3	2.3	1.6	1	1	1	1.3	1	1	1

IV SEMESTER

Course Code: 22OEECO401	**Course Title:** OE 4: Karnataka Economy
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Understand the nature of economic growth and problems of Karnataka state.

CO2. Explain the process of structural growth in Karnataka Economy

CO3. Evaluate the policies and programs undertaken by the Govt. of Karnataka for bringing aboutsocio-economic development

Contents	42 Hrs
Unit–1: Karnataka Economy – An overview	**15**
Chapter:1 Characteristics of Karnataka Economy Features of Karnataka economy -Trends and sectoral distribution of state domestic product andper capita income Measures to redress regional imbalances – Dr. Nanjundappa committee report,-Article 371J	6
Chapter-2: Human Resources Human resources: importance, size and health indicators - Human Development Index – Poverty and unemployment– Eradication programs	4
Chapter-3: Natural Resources Management Natural Resources: Importance and volume of different natural resources - Karnatakaenvironmental policy	5
Practicum: Conduct field visit to Forest/Reservoir/Mining and prepare the report	
Unit -2: Agriculture, Rural development, and Industries in Karnataka	**11**
Chapter-5: Rural Development Public distribution system - Rural development programs (brief) - Government schemes forrural women	4
Chapter-6: Industries in Karnataka Major industries in Karnataka: problems and prospects - MSMEs : problems and measures - ITindustries in Karnataka - Industrial finance in Karnataka - Industrial policy of Karnataka	7
Practicum: visit to industrial units in local area and prepare the report/Trace-out the impact of Prof. D. M. Nanjundappa Committee report	

Unit -3: Infrastructure and Finance in Karnataka	16
Chapter-7: Economic Infrastructure Transportation: Road, Rail, Water and Air transport. Information and communication technologyfacilities	6
Chapter-8: Social Infrastructure Drinking water - Housing and Sanitation - Health and Education - Rural Electrification	4
Chapter-9: State Finance Sources of Revenue: Direct and Indirect Taxes - Impact of GST on Karnataka economy - StateExpenditure - State Finance Commission -Current State Budget (Brief)	6
Practicum: Discussion on State budget	

References	
1	Government of Karnataka, Economic Survey [Various Issues]
2	Planning Department, Annual Publication, Government of Karnataka.
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4	Madaiah M & Ramapriya. Karnataka Economy Growth: Issues and Development, Himalaya Pub.,House, NewDelhi.
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Web links;

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- https://www.merriam-webster.com/dictionary/karnataka%20environmental%20policy
- https://www.merriam-webster.com/dictionary/infrastructure%20and%20finance%20in%20karnataka
- https://www.iosrjournals.org/iosr-jbm/papers/Vol20-issue3/Version-12/I2003126773.pdf

Course Articulation Matrix - 22OEECO401

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	3	2	2	2	2	2	2	1	1	1	1
CO2	2	2	2	2	2	1	1	1	1	1	-	1
CO3	1	1	2	2	1	-	2	1	1	1	-	1
Weighted Average	1.6	2	2	2	1.6	1.5	1.6	1.3	1	1	1	1

IV Semester

Course Code -22OEECO402	**Course Title:** OE 4: Entrepreneurial Economics
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Gain the capacity to Start own business as an Entrepreneur

CO2. Enabling the students to find career opportunities in the field of business.

CO3. Enable the students to gain knowledge and skills needed to run a business successfully.

Contents	**42 Hrs**
Unit–1: Entrepreneur and Entrepreneurship	**12**
Chapter 1: Entrepreneur and Entrepreneurship: Meaning, Definitions, Evolution, types, Characteristics, qualities and functions of entrepreneur- Distinction between entrepreneur and manger, Distinction between entrepreneur and intra-preneur,	05
Chapter 2: Role and importance of Entrepreneurship: Role and importance of Entrepreneurship in economic development, Factors influencing entrepreneurship'- Psychological, social, economic and environmental.	04
Chapter 3: New generations of entrepreneurship: New generations of entrepreneurship: social, health, tourism and women entrepreneurship; barriers to entrepreneurship.	03
Unit -2: Launching Entrepreneurial Ventures	**12**
Chapter 4: Generation of ideas: Generation of ideas: Methods and process - sources of ideas - screening process- Assessingopportunities-Challenges, pitfalls and critical factors of new venture;	04
Chapter 5: Business plan Business plan - New ventures: Steps involved in setting up a business – identifying, selecting good business opportunity, Market survey and research, techno-economic feasibility assessment.	04
Chapter 6: Role of Innovation & Creativity: Innovation- Meaning and importance of innovation; Types of innovation; Sources of innovation; Conditions for effective innovation at Organization level.	04

Unit -3: Business and Entrepreneurial development	18
Chapter 7: Creativity: Creativity: Concept and process of creativity; role and importance of creativity and mentalblocks to creativity; branding, trademarks, patents, copyrights, and registered design protection- Methods of protecting innovation and creativity.	05
Chapter 8: Entrepreneur Assistance: Entrepreneur Assistance: Assistance to an entrepreneur-Industrial Park (Meaning, features, & examples)-Special Economic Zone (Meaning, features & examples)-Financial assistance by different agencies-License, Environmental Clearance, e-tender process, Excise exemptions and concession, Exemption from income tax -Quality Standards with special reference to ISO.	06
Chapter 9: Business and Entrepreneurial development Business and Entrepreneurial development: Determining and acquiring required resources (Financial, Physical and Human): Search for entrepreneurial capital- Debt vs. Equity; Venture Capital Market; Angel financing and alternative sources of finance for entrepreneurs. Entrepreneurship development programme (EDP) in India– Objectives, phases, and inputs of EDP; - Government initiatives for entrepreneurship – Make in India, Start-up India, MUDRA etc.	07

References	
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- https://openstax.org/books/entrepreneurship/pages/15-1-launching-your-venture
- https://leverageedu.com/blog/entrepreneurship-development/
- https://mitidinnovation.com/recreation/role-of-innovation-in-entrepreneurship/

Course Articulation Matrix - 22OEECO402

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	2	1	-	2	1	1	1	3	1	3	2
CO2	2	1	-	1	2	1	-	1	2	1	1	1
CO3	2	2	1	-	2	1	1	1	3	1	3	3
Weighted Average	2	1.6	1	1	2	1	1	1	2.6	1	2.3	2

IV Semester

Course Code: 22OEECO403	**Course Title:** OE 4: Economics and Law
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Comprehend the basic economic issues affecting the economy along with the related legalprovisions

CO2. Acquire knowledge on the basic provisions of law relating to consumer activities, business organizations, environment also to recognize the law framework in order to frame the economic model closer to reality.

CO3. Enable the students to realize the consequences of legal rules, primarily as an exercise in applied microeconomics, macroeconomics, industrial and international economics.

Contents	42 Hrs
Unit–1: Economic analysis of law	**14**
Chapter 1: Introduction to legal reasoning Efficiency- Markets and efficiency - Market failure - Coase theorem and related ideas.	5
Chapter 2: welfare economics Compensation principles - Social welfare function - Maximization problem	4
Chapter 3: Economic Reasoning Nature of economic reasoning - Economic approach to law – History - Criticism	5
Practicum: 1. Group Discussions on Economic reasoning. 2. Assignment on Coase theorem and related issues	
Unit -2: An Introduction to Law and Legal Institutions	**12**
Chapter 4: Law Definition -Territorial Nature of Law - Kinds of Law - General Law and Special Law - Kinds ofSpecial Law	6
Chapter 5: Civil law and the and the Common Law Traditions The institutions of the federal and State Court systems - The nature of legal dispute - How legalrules evolve	6
Practicum: 1. Group Discussions on Civil law and the and the Common Law Traditions 2. Assignment on the different kinds of Law	
Unit -3: Economic Laws	**16**
Chapter 6: Law Relating to Consumer Activities Bargaining theory - Economic theory of contract - Defining tort law - Economics of tort liability -Definition of Consumer - Consumer protection; The Consumer Protection Act, 2019 – Consumer courts.	5

Chapter 7: Law of Business Organizations Structure of firm — Kinds, Corporations -Capital, Shares, Debentures, Insiders' and trading-RBI,IRDA, MRTP, Role of SEBI,	5
Chapter 8: Macroeconomics and Law Inequality; Contract theory of Distributive justice - Economic and social costs of poverty – Wealth distribution by Liability Rules – Taxation and efficiency - National and global environmentalproblems and international environmental agreements - their legal and economic implications	6
Practicum 1. Hold the moot court in the classroom and let there be discussion consisting of at least two or moredifferent views on National and Global environment problems and acts. 2. Discuss the case studies on Economic and social costs of poverty and consumer court judgements protecting the consumers.	

References	
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- https://books.google.co.in/books?hl=en&lr=&id=1ahQAAAAQBAJ&oi=fnd&pg=PR5&dq=introduction+to+legal+reasoning&ots=hvd9HUqQVe&sig=XE6w5tTy42YaXXz-lnKsky3Kfvs#v=onepage&q=introduction%20to%20legal%20reasoning&f=false
- https://www.google.co.in/search?tbm=bks&hl=en&q=Kinds+of+specific+law
- rOJmAE&ved=0ahUKEwjwm7rEv_P7AhXhSWwGHfpZAhMQ4dUDCAo&oq=Law+relating+to+consumer+activities&gs_lcp=Cg1nd3Mtd2l6LWJvb2tzEAw6BQgAEIAEOgcIABCABBANOgQIIRAKUABYu2BgjW9oA3AAeACAAZwBiAH8GZIBBDMwLjaYAQCgAQHAAQE&sclient=gws-wiz-books
- https://www.google.co.in/books/edition/Law_and_Macroeconomics/G4GFDwAAQBAJ?hl=en&gbpv=1&dq=Macroeconomics+and+law&printsec=frontcover

Course Articulation Matrix- 22OEECO403

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	1	-	-	1	2	2	2	1	1	1	1
CO2	2	1	1	1	1	2	2	2	1	1	-	1
CO3	2	1	1	1	1	2	2	2	-	1	1	1
Weighted Average	2	1	1	1	1	2	2	2	1	1	1	1

IV Semester

Course Code: 22OEECO404	**Course Title:** OE 4: Economics of GST
Course Credit (L:T:P): 3 (3:0:0)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Acquire knowledge on indirect taxes with special reference to GST

CO2. Application of theoretical and Practical knowledge of GST and its Evolution in India

CO3. Enable the students to be aware of the GST Law, ITC, Valuation of supply and returns, Simple calculation of GST and Input Tax Credit, Valuation of Supply

Contents	42 Hrs
Unit–1: Introduction to Economics of GST	**14**
Chapter 1: Indirect taxes before GST Indirect Taxes-Meaning, Types with examples -Constitutional framework of Indirect Taxesbefore GST (Taxation Powers of Union & State Government) -Concept of VAT: Meaning, Variants and Methods;	5
Chapter 2: Reforms in Indirect Taxes Major Defects in the structure of Indirect Taxes prior to GST; Need for Tax reforms - Kelkarcommittee on Tax Reforms	4
Chapter 3: Introduction to GST Rationale for GST - Constitution [101st Amendment] Act, 2016 - GST- Meaning, Overview of GST - Taxes subsumed under GST - Territorial Jurisdiction of GST- Multiple rates of GST -Recent reforms in GST.	5
Practicum: 1. Group Discussions on Indirect Taxes defects prior to GST. 2. Assignment on Types of Indirect Taxes prior to GST and After introduction of GST.	
Unit – 2 Fundamentals of GST	**12**
Chapter 4: GST Structure in India GST: Advantages and Disadvantages - One Nation-One Tax - Structure of GST - Features ofSingle and Dual GST Model	6

Chapter 5: Dual GST Mode and GST Council Dual GST Mode in India: l SGST, CGST, UTGST & IGST) - Goods and Services Tax Network[GSTN] - GST Council; Creation, Members, Decisions, Compensation to states - GST Network – Registration.	6
Practicum: 1. Group Discussions on advantages and disadvantages of GST 2. Hold the moot of GST Council in the class room and decide the different slabs of GST	
Unit -3: Taxes and Duties	**16**
Chapter 6: Transactions and taxes covered and not covered Transactions and taxes covered under GST - Taxes and duties outside the purview of GST - Taxstructure Computation - Administration of Tax on items containing alcohol, petroleum products, tobacco products - Taxation on services.	4
Chapter 7: Levy and Collection of Tax Taxable event- "Supply" of Goods and Services - Place of Supply: Within state, Interstate Levy and Collection - Import and Export; Time of supply - Valuation for GST- Valuation rules - Taxability of reimbursement of expenses - Exemption from GST: Small supplies and CompositionScheme Classification of Goodsand Services: Composite and Mixed Supplies.	6
Chapter 8: Input Tax Credit Eligible and Ineligible Input Tax Credit - Apportionments of Credit and Blocked Credits - Tax Credit in respect of Capital Goods - Recovery of Excess Tax Credit - Availability of Tax Credit in special circumstances - Transfer of Input Credit (Input Service Distribution) -Payment of Taxes; Refund; Doctrine of unjust enrichment.	6
Practicum 1. Simple illustrations on calculation of GST and Input Tax Credit, 2. Valuation of Supply (Numerical on valuation and calculation of tax) 3. Simple calculation Adjustment of Input tax credit against output CGST, SGST, IGST.	

References	
1	The Central Goods and Services Tax, 2017
2	The Integrated Goods and Services Tax, 2017
3	The Union Territory Goods and Services Tax, 2017
4	The Goods and Services Tax (Compensation to States), 2017
5	The Constitution (One hundred and First Amendment) Act, 2016
6	Gupta, S.S. , *GST- How to meet your obligations (April 2017),* Taxmann Publications
7	Datey,V.S. (2019) . *Indirect Taxation*. New Delhi *Vastu and Sevakar Vidhan* by Government of India
8	Mehrotra, H.C. & Goyal, S.P.(2019), Indirect Taxes, Agra: Bhawan Publications.

Web links:

- https://gstcouncil.gov.in/brief-history-gst
- https://khatabook.com/blog/structure-of-gst/
- https://taxguru.in/goods-and-service-tax/dual-gst-model-gst-structure-india.html
- https://www.icsi.edu/media/webmodules/customs%20laws/Levy_&_Collection_CGST(11-2).pdf
- https://www.bajajfinserv.in/insights/types-of-gst-in-india#:~:text=Currently%2C%20the%20types%20of%20GST,three%20different%20types%20of%20GST.

Course Articulation Matrix - 22OEECO404

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
CO1	2	2	1	1	2	1	1	1	-	1	1	1
CO2	2	1	1	1	1	1	1	1	1	1	-	1
CO3	3	2	1	1	1	1	1	1	-	1	1	1
Weighted Average	2.3	1.6	1	1	1.3	1	1	1	1	1	1	1

Continuous Internal Evaluation and Semester Examination

Total marks for each course shall be based on continuous assessments and term end examinations. As per the decision of the Karnataka State Higher Education Council, it is necessary to have uniform pattern of 40:60 for CIE and Semester End examinations respectively, among all the Universities, their affiliated and autonomous colleges.

The committee deliberated on the same and suggested the following pattern for the CIE Marks.

Sl. No.	**Parameters for the Evaluation**	Marks
	Continuous Internal Evaluation (CIE)	
A	**Continuous & Comprehensive Evaluation (CCE)**	**20**
B	**Internal Assessment Tests (IAT)**	**20**
	Total of CIE (A+B)	**40**
C	**Semester End Examination (SEE)**	**60**
	Total of CIE and SEE (A+B+C)	**100**

Outline for continuous assessment activities for C1 and C2

Activities	**C1**	**C2**	**Total Marks**
Session Test	10 marks	10 marks	20
Case study / Assignment / Field work / Project work/ Academic Quiz/ Review of the Book/ etc.	10 marks	---	10
Case study / Assignment / Field work / Project work/ Academic Economics Quiz/ Review of the Book/ etc	---	10 marks	10
Total	20 marks	20 marks	40

QUESTION PAPER PATTERN (C3) FOR DSC & OE PAPERS

Maximum Marks: 60 **Duration:** $2\frac{1}{2}$ Hours

PART -A

Answer any Five of the following: **5X2 =10**

Sl. No. 1

a.
b.
c.
d.
e.
f.
g.
h.

PART - B

Answer any Six of the following: **6X5 =30**

Sl. No. 2 to 10

PART - C

Answer any Two of the following: **2X10 =20**

Sl. No. 11 to 14

Mahajana Education Society (R)

Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA

Affiliated to University of Mysore,

Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

Department of Economics

BoS meeting of the Department of Economics was held on 17.09.22 at 11.00 am in AVC-1. Necessary changes and modifications for the Syllabi of I and II Semester BA have been incorporated and some minor changes have been made in the syllabi of III & IV Semester BA as instructed by University of Mysore and as per the NEP- 2020 Guidelines. Proposed List of the Examiners for the academic year 2022-23 was placed before the members. The same was approved by the following BoS Members.

Board of Studies - Department of Economics

Sl. No.	Designation	Name	Signature
01	University Nominee	**Dr. Navitha Thimmaiah,** Associate Professor DoS in Economics & Cooperation, UoM, Mysuru.	Navitha Thimmaiah 17/09/2022
02	Subject expert	**Dr. Ramakrishna B M** Associate Professor University college Hampanakatta (Constituent college of Mangalore University) Mangaluru-575001	17/9/22
03	Subject expert	**Dr. E. Thippeswamy** Associate Professor, Field Marshal K. M. Cariappa College (Constituent college of Mangalore University) Madikeri-571201	17/09/22
04	HoD & Faculty Member	**Venkatalakshmi M N** Associate Professor, SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	MN
05	Faculty Member	**Dr. Pushparani P G** Assistant Professor SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	— ABSENT —

06	Faculty Member	**Siddappa R** Assistant Professor SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	
07	Faculty Member	**Chaluvegowda S M** Assistant Professor SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	
08	Subject Expert & Alumnus	**Dr. Roopa Patavardhan** Assistant Professor School of Business studies and Social Sciences, Christ(Deemed to be University) Hulimavu, Bengaluru-76	
09	Industry Person	**Nikhil Maruthi** Stake Holder LLP Partner,Solution Infinite Media Pvt.Ltd, T-301, Chicago Avenue, Cunningham Road,Opp.Fortis Hospital, Bengaluru-560001	-ABSENT-

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BOARD OF STUDIES (BoS)

DEPARTMENT OF ECONOMICS

UG [√]

PG [ ]

NEP Syllabi for V and VI Semester BA

Economics

2023-24

DEPARTMENT OF ECONOMICS

Motto

Economics for Empowerment and Enhancement

Vision

To prepare Students for successful careers as applied economists

Through fine tuning of minds & to make them understand and analyze the

Dynamics of Economic changes

Mission

Providing a sound theoretical base to develop quantitative aptitude,

to substantiate theoretical learning

Exposure to practical aspects of Present day economic challenges

POs	Details of the Programme Outcomes (POs)
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Department of Economics - List of Board of Studies Members

Sl. No.	Category	Name	Designation	Address for communication	E-mail and Mobile No.
01	**University Nominee**	**Dr. Navitha Thimmaiah**	Professor	DoS in Economics & Cooperation, UoM, Mysuru.	navithaprasad@gmail.com +919036180571
02	**HoD & Faculty of the Department**	**Venkatalakshmi M N**	Associate Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	venkatalakshmimn.fgc@mahajana.edu.in +91 9448472024
		Dr.Pushparani P G	Assistant Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru - 12	pushparanimfgc@gmail.com +91 9945094843
		Siddappa R	Assistant Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru - 12	mnsh1611@gmail.com +91 8050365338
		Chaluvegowda S M	Assistant Professor	SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru - 12	Chaluvegowda25@gmail.com +918217310214
03	**Two Experts from other University**	**Dr. Ramakrishna B M**	Professor	University college,Hampanakatta, (A Constituent college of Mangalore University) Mangaluru-575001	rama_bmr@yahoo.co.in +91 9448427705
		Dr. E. Thippeswamy	Professor	Field Marshal K. M. Cariappa College, (A Constituent college of Mangalore University) Madikeri-571201	ethippeswamy@yahoo.com +91 9448639972
04	**Alumnus**	**Dr. Roopa Patavardhan**	Alumnae & Assistant Professor	School of Business studies and social sciences, Christ (Deemed to be University) Hulimavu, Bengaluru-76	roopa.patavardhan@christuniversity.in +91 9901997086
05	**Industry Expert**	**Nikhil Maruthi**	Stakeholder & LLP Partner	Merako Media Pvt Ltd Mysuru	nikhilmaruthi26@gmail.com +91 9650266082

Year-wise Programme Structure (NEP 2020)

Discipline Specific Courses (DSC)
V & VI Semester BA

Course, Type, Code and Title		Hour/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/ P	L: T:P	C1	C2	C3		Marks
Economics – V Sem BA									
DSC (9) 231537	Public Economics	4	0	4:0:0	20	20	60	$2\frac{1}{2}$ Hours	100
DSC (10) 231538	Development Economics	4	0	4:0:0	20	20	60	$2\frac{1}{2}$ Hours	100
DSC (11) 231539	Indian Banking and Finance	4	0	4:0:0	20	20	60	$2\frac{1}{2}$ Hours	100
DSC (11.1) 231540	Economics of Human Resource management	4	0	4:0:0	20	20	60	$2\frac{1}{2}$ Hours	100
SEC (5) 23 EMP ECO01	Employability Skills	2	0/1	2:0:1	20	20	60	$2\frac{1}{2}$ Hours	100

Economics – VI Sem BA

Course, Type, Code and Title		Hour/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L: T:P	C1	C2	C3		Marks
DSC (12) 231637	International Economics	4	0	4:0:0	20	20	60	$2\frac{1}{2}$ Hours	100
DSC (13) 231638	Indian Public Finance	4	0	4:0:0	20	20	60	$2\frac{1}{2}$ Hours	100
DSC (14) 231639	Environmental Economics	4	0	4:0:0	20	20	60	$2\frac{1}{2}$ Hours	100
DSC (14.1) 231640	Economic Thoughts of B R Ambedkar	4	0	4:0:0	20	20	60	$2\frac{1}{2}$ Hours	100
INT	Internship 23INTECO01	2	0	2:0:0	50	50	-	-	100

V Semester BA

Course Code: 231537	**Course Title:** DSC (9): Public Economics
Course Credit (L:T:P): 4 (4:0:0)	**Teaching Hours/Week:** 4 Hours
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

CO1. Comprehend the introductory concepts of Public Finance & analyse the causes of market failure and corrective actions

CO2. Examine the impact, incidence and shifting of tax and Study the Economic Effects of tax on production, distribution and other effects

CO3. Enable the students to identify the Principles and Effects of Public Expenditure, public debt & Sources of Public Borrowing and Burden of Public Debt

CO4. Identify the Economic and functional classification of the budget; to acquaint with the advantages and disadvantages of Deficit Financing.

Modules	Description	60 Hours
Module-I	**Introduction to Public Economics**	**15**
	Public Economics: Meaning, definitions, Scope and Significance, Public Finance and Private Finance: Meaning, and Distinction; Public good and private good: Meaning and Distinction, Principle of Maximum Social Advantage, Externalities: Meaning and its Role, Market Failure: Meaning, causes. Market failure and role of government	
Practicum	Group Discussions on Public Finance and private finance; public good and private good Assignment on Market failure and government intervention	
Module II	**Public Revenue and Public Expenditure**	**18**
	Meaning and sources of revenue; Taxation –Cannons of taxation, Characteristics of a sound tax system, Impact, Incidence- Division of Tax burden, Shifting of tax, Economic Effects of tax on production, distribution and other effects, Progressive and Regressive, Proportional Tax, Direct and Indirect Taxes –Merits and Demerits. Public Expenditure; Meaning, Classification & Cannons, Reasons for the growth of public expenditure, Wagner's law of increasing state activities, Effects of public expenditure: Production, Distribution &Other effects.	

Practicum	Mini-project/study to ascertain the impact of GST on retailers/wholesalers in your vicinity A case study on the taxable capacity of the different sections of society in the vicinity Assignment on Effects of public expenditure: Production, Distribution & Other Effects	
Module III	**Public Debt**	**12**
	Public Debt: Meaning, Types & Effects**;** Sources of Public Borrowing; Burden of Public Debt - Classical/ Ricardian views and Keynesian views (in brief); Causes of the Rise in Public Debt**;** Methods of debt redemption.	
Practicum	Studying the burden of public debt through a project/ case study Assignment on Debt Management	
Module IV	**Public Budget, Fiscal Policy and Fiscal Deficit**	**15**
	Budget: Meaning, process & Types of budget, Economic and functional, classification of the budget; Balanced and unbalanced budget, Types of Budget Deficits; Fiscal Policy: Meaning, objectives & Tools; Fiscal deficit: Meaning, Computation, Deficit Financing: Meaning, Advantages and Disadvantages	
Practicum:	Calculation of various types of budget deficit using the budget data Group discussion on the advantages and disadvantages of deficit financing	

References
Lekhi R.K., Joginder Singh (2018) Public Finance, Kalyani publication, New Delhi
Tyagi B.P. (2014) Public Finance published by Jaya Prakash Nath and CO, Meerut
Hindriks J. and G. Myles (2006): Intermediate Public Economics, MIT Press.
Bhatia H L (2018): Public Finance. Vikas Publishing House.
Musgrave, R.A. (1989), The Theory of Public Finance, McGraw Hill
Musgrave R.A. and P.B. Musgrave (1989), Public Finance in Theory and Practice, McGraw Hill,

Web links:

- https://www.geeksforgeeks.org/difference-between-public-finance-and-private-finance/
- https://en.wikipedia.org/wiki/Market_failure
- https://www.economicsdiscussion.net/government/taxation/canons-of-taxation-meaning-types-and-characteristics/17428
- http://www.eagri.org/eagri50/AECO141/lec16.pd
- https://www.studyiq.com/articles/fiscal-policy/
- https://www.wallstreetmojo.com/public-debt

Course Articulation Matrix: 231537

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	2	2	3	3	2	2	1	1	2	2	2
CO2	3	2	2	3	2	2	2	2	1	2	2	2
CO3	3	2	2	2	2	2	2	2	1	2	1	2
CO4	3	3	2	2	2	2	2	2	1	2	1	2
Weighted Average	2.75	2.25	2	2.5	2.25	2	2	1.75	1	2.25	1.5	2

V Semester BA

Course Code: 231538	**Course Title:** DSC (10): Development Economics
Course Credit (L:T:P): 4 (4:0:0)	**Teaching Hours/Week:** 4 Hours
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

- CO1. Examine the basic concepts and measurements of Development.
- CO2. Acquire the knowledge with some classical and partial theories of Development economics and identify the differences.
- CO3. Identify the distinction between Developed and Developing Countries.
- CO4. Analyse and tackle the Development issues effectively.

MODULES	DESCRIPTION	60 Hrs
Module I	**Introduction to Economic Development**	**14**
	Concept - Definitions - Distinction between Economic Growth and Development - Indicators of Growth and Development, Measures of Economic Development: Gross National Product (GNP) - Physical Quality of Life Index (PQLI), Human Development Index (HDI), Happiness Index, Multi-Dimensional Poverty Index(MDPI).	
Practicum:	Assignment on various indicators of growth and development Group discussions about the characteristic features of different countries and theirdevelopment levels	
Module II	**General Theories of Economic Growth and Development**	**16**
	Adam Smith's Theory, David Ricardo's Theory, T.R. Malthus' Theory, Karl Marx'sTheory, Schumpeter's Theory and Rostow's Growth Theory - Harrod-Domar Model(in brief).	
Practicum:	Assignment on different theories and their relevance to developing Countries, Debate on present stage of India's growth and estimated stage it may reach by 2047	

Module III	Partial Theories of Economic Development	16
	Lewis Labour Surplus Model – Harris Todaro model of Migration (in brief) Rodan's Big Push Theory - Lieberstein's Critical Minimum Effort Approach - Balanced Vs. Unbalanced Growth, Factors in the Development Process - Capital Accumulation - Capital-Output Ratio - Technology and Economic Development.	
Practicum:	Group Discussion on Balanced and unbalanced growth strategies in Developed anddeveloping countries Assignment on the Factors in the Development Process Capital Accumulation	

Module IV	Sustainable Development	14
	Inclusive Development - Millennium Development Goals - Sustainable DevelopmentGoals, Targets and Achievements with reference to India.	
Practicum	Seminar on MDGs and SDGs and the challenges	

References	
1	Higgins Benjamin & W.W. Norton Economic Development New York & Company. Inc.
2	Mishra S.K and Puri V.K, Economic Development and Planning, Himalaya Pub., House, Mumbai.
3	Taneja M.L. and Meier G. M, Economics of Development and Planning, S. Chand and Co, New Delhi.
4	Thirlwall A.P. Growth and Development: With Special Reference to Developing Economies, PalgraveMacmillan, New York.
5	Todoaro. M.P & Orient Longman Economic Development in the Third World, United Kingdom
6	Sustainable Development Reports

Web links:

- https://www.shiksha.com/online-courses/articles/difference-between-economic-growth-and-economic-development/
- http://www2.harpercollege.edu/mhealy/g101ilec/intro/eco/ecomea/ecomeafr.htm
- https://www.youtube.com/watch?v=DevD4b7HQ7U
- http://www.ebookbou.edu.bd/Books/Text/SOB/MBA/mba_4334/Unit-02.pdf
- https://www.un.org/en/chronicle/article/w-arthur-lewis-pioneer-development-economics
- https://en.wikipedia.org/wiki/Sustainable_development

Course Articulation Matrix-231538

PO's / CO's	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	2	2	3	2	2	2	2	2	3	2
CO2	3	2	3	2	2	2	2	2	1	2	3	2
CO3	3	2	3	2	2	2	2	2	1	2	3	2
CO4	3	3	2	3	3	3	3	3	2	2	2	3
Weighted Average	2.75	2.25	2.75	2.25	2.5	2.25	2.25	2.25	1.5	2	2.75	2.25

V Semester BA

Course Code: 231539	Course Title DSC (11): Indian Banking and Finance
Course Credit (L:T:P): 4 (4:0:0)	**Teaching Hours/Week:** 4 Hours
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

- CO1. Identifying the basics structure of Indian banking and the role of banks in monetary policy.
- CO2. Analyze the functioning of banks and different types of accounts and other services offeredby banks.
- CO3 Evaluate recent developments in the Indian banking sector, including digital banking,payment banks, and non-performing assets.
- CO4. Analyze the challenges faced by Indian banks and the implications of banking reforms for the Indian economy. Develop critical thinking and analytical skills in evaluating various financial products and services banks and capital markets offer.

MODULES	DESCRIPTION	60 Hours
Module I	**Introduction to banking: India**	**15**
	Indian Banks: Evolution, Structure: Public sector, private sector, Foreign, Cooperative, RRB, Small finance banks, Payment banks; Role and importance of banks in the Indian economy; Commercial bank: Meaning and Functions; Central Bank: Meaning and Functions;Issues in banking sector; NPA crisis.	
Practicum	Compare and contrast the different types of banks, highlighting their strengths andweaknesses- Presentation. Conduct a class discussion and compare and contrast the different scenarios on various loans, highlighting the risks involved and the measures taken by banks to manage theserisks.	
Module II	**Banking services**	**15**
	Banking services: Types of bank accounts; Account opening and importance of KYC; Bank loans; types, Documents required; eligibility, interest rates, maturity; Other services: Locker facility, payment and remittance services; debit cards, credit cards; ATMs; internet and mobile banking; Modern banking products: Insurance on deposits and loans, Investment services in capital market-stocks, bonds and mutual funds.	

Practicum	Group discussion on bank accounts and loan products and making recommendation to different classes ,Comparison of banking services by visiting bank branches

Module III	**Modern Banking**	**15**
	Modern banking facilities; Digital banking; Digital Wallets; Digital account opening; Biometrics; contact less payment system; instant payments; personal finance management tools; Use of artificial intelligence and machine learning in banks; Cyber security in banking; Credit scoring.	
Practicum:	Survey bank customers to understand their usage and satisfaction levels with digital banking services. Analyze the adoption rates of digital banking services across different age groups anddemographic segments	
Module IV	**Financial Market**	**15**
	Introduction to Indian financial markets; Equity markets and stock exchanges; Debt markets and bond markets; Currency markets and forex trading; Commodity markets and trading; Capital market: Meaning and its products; Risk in capital market investments; Role of SEBI, Fin-tech .	
Practicum	Debate: Investing in capital market products. Assignment on Indian financial markets	

References	
1	Khan, M. Y. (2019). Indian Financial System (11th ed.). McGraw Hill Education (India) PrivateLimited.
2	RBI (2022) report on the trend and Progress of Banking in India
3	Pathak, B. V. (2018). Indian financial system. Pearson Education
4	Principles and Practices of Banking (2023), Indian Institute of Banking & Finance (IIBF),MacMillian
5	Shekhar, K. C. & Shekhar, L. (2013). Banking Theory and Practice, 21st Edition
6	Taxman's Digital Banking, Indian Institute of Banking & Finance (IIBF), Bharati Law House
7	Reserve Bank of India. (2017). Basic Financial Literacy Guide.
8	Securities and Exchange Board of India. (2021). Handbook of Statistics on Indian Securities Market.
9	Financial Education Handbook (2021) National Centre for Financial Education (NCFE)
10	Investor Education material by National Stock Exchange

Web links:

- https://www.toppr.com/guides/general-awareness/banks/introduction-to-banks/#:~:text=Banking%20in%20India%20has%20been,see%20the%20introduction%20of%20Banks.
- https://www.bankbazaar.com/home-loan/different-types-of-bank-loans-in-india.html
- https://www.nseindia.com/invest/how-to-invest-in-capital-market
- https://www.nseindia.com/invest/how-to-invest-in-capital-market
- https://www.sebi.gov.in/reports-and-statistics/publications/dec-2022/handbook-of-statistics- 2021_66158.html
- https://en.wikipedia.org/wiki/Bank
- https://www.brainkart.com/article/Modern-Banking-Services_35371/
- https://www.investopedia.com/terms/f/financial-market.asp

Course Articulation Matrix - 231539

POs / COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	P 09	PO 10	PO 11	PO 12
CO1	3	3	2	2	2	2	2	2	2	2	2	2
CO2	3	2	3	2	3	2	2	2	2	2	2	3
CO3	3	3	3	2	3	2	2	3	2	2	3	3
CO4	3	3	3	2	3	2	2	3	2	2	3	3
Weighted Average	3	2.75	2.75	2	2.75	2	2	2.5	2	2	2.5	2.75

V Semester BA

Course Code: 231540	**Course Title** DSC (11.1): Economics of Human Resource Management
Course Credit (L:T:P): 4 (4:0:0)	**Teaching Hours/Week:** 4 Hours
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

- CO1. Acquire the knowledge about meaning, nature, scope and value of the contemporary approach to humanresource management with reference to Economics.
- CO2. Evaluation of an organisation of a human resource management functionary in anestablishment, and to identify attributes of a successful personnel manager.
- CO3. Imparting knowledge and techniques in human resource planning, Job-Analysis, and Job-Design.
- CO4. Analysis of the importance and methods adopted for training and development of employees in the workplace.

MODULES	DESCRIPTION	60 Hours
Module I	**Introduction to Human Resource Management**	**15**
	Human Resource Management: Concept, Nature, scope, objectives, importance, functions of Human Resource Management with reference to Economics; Characteristics of a Human Resource Manager, HRD - Responsibility of managers.	
Practicum	Group Discussions on Human Resource Management as a Profession. Assignment on Qualities of Personnel Manager	
Module II	**Procurement of Human Resources**	**15**
	Human Resource Planning – Concept and objectives, importance, process, problems and guidelines; Job Design and Analysis: Concept, process, job description and job specification; Recruitment and Selection Meaning and process of recruitment, recruitment policy and organization, techniques of recruitment.	
Practicum	Assignment on recruitment and Group discussion on Techniques of Recruitment	

Module III	**Training and Job Evaluation**	**15**
	Training: Concept, objectives, importance; identifying training needs. Designing training programs, methods of training, advantages and limitations, methods of job evaluation, Wage and Salary Administration. Objectives and principles, essentials of sound wage structure, factors affecting wages, methods of wage payment, and wage policy in India.	
Practicum	Project on training and job evaluation	
Module IV	**Performance Appraisal**	**15**
	Performance appraisal: Concept, objectives, problems, methods and techniques, interview, Transfers, promotions and separations. Purpose of job changes, concept and objectives of transfers. Types of transfer, transfer policy, concept and basis of promotion, promotion policy, demotion, types of separations.	
Practicum	Seminar on transfers and promotions Group discussion on Performance appraisal	

References	
1	Koontz, Weirich & Aryasri, (2004) Principles of Management, Tata McGraw-Hill, New Delhi,
2	Tripathi & Reddy, (2008) Principles of Management, Tata McGraw-Hill, New Delhi, Laurie
3	Meenakshi Gupta, (2009) Principles of Management, PHI Learning, New Delhi,
4	Gupta (2016), Human resource Management. S Chand Publisher. New Delhi
5	Aswathappa K. (2020) Human resource Management, Tata Mc Graw Hill Publishing Co. Ltd.
6	Prasad L. M, (2017) Organisational Behaviour, S. Chand Publishers, New Delhi.

Web links:

- https://www.whatishumanresource.com/human-resource-management
- https://www.mbaknol.com/human-resource-management/human-resource-planning/
- https://www.economicsdiscussion.net/human-resource-management/human-resource-planning
- https://www.shrm.org/resourcesandtools/tools-and-samples/policies/pages/recruitment-selection-
- https://www.managementstudyguide.com/performance-appraisal.htm
  https://www.businessmanagementideas.com/human-resource-management-2/transfers-of-

Course Articulation Matrix - 231540

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO 10	PO 11	PO 12
CO1	3	3	2	2	3	2	2	3	2	3	3	3
CO2	3	3	3	3	3	2	2	3	3	3	3	2
CO3	2	3	2	2	3	2	2	3	2	2	2	3
CO4	3	3	3	2	3	2	2	2	2	2	3	2
Weighted Average	2.75	3	2.5	2.25	3	2	2	2.75	2.25	2.5	2.75	2.5

V Semester BA

Course Code: (23EMPECO01)	**Course Titl**e:(SEC-5)Employability Skills
Course Credit (L:T:P): 3 (2:0:1)	**Teaching Hours/Week:** 3 Hours
Total Contact Hours: 45 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Pedagogy: Classroom lectures, Activities based learning, Practice Questions, Tutorial Classes, Group discussions, Mock Tests, etc.,

Course Outcomes: (Cos)

- Develop systematic problem-solving abilities.
- Enhance verbal and non-verbal reasoning skills.
- Improve numerical and analytical abilities.
- Enhance English language and communication skills.

Syllabus:	
Module No. 1: General Orientation on all Competitive Exams	**5**
Overview of Competitive Exams for Government Recruitment in India - Introduction, Eligibility Criteria, Exam Pattern, Syllabus, and Resources.	
Module No. 2: Quantitative Aptitude	**15**
Number system, HCF &LCM, Ratio and Proportion, Averages, Ages, Percentages, Partnerships, Time, Speed and Distance, Profit and Loss, Data Interpretation, Problems based on Simple interest, Compound interest, Clocks, and Calendars.	
Module No. 3: Verbal and Nonverbal Reasoning	**15**
Verbal Reasoning: Data analysis, Data sufficiency, Decision making, coding & decoding, Blood relations, Puzzle tests, Direction sense test, Problems based on Venn Diagram/Syllogisms, Non-Verbal Reasoning: Analogy, Water images, mirror images, embedded figures, Completion of Pattern, Paper folding, Cubes & dice, Figure Formation & Analysis.	
Module No. 4: English Language and Comprehension Solving	**10**
Vocabulary, English Grammar, Verbal Ability, Sentence Structure, Spot the Error, Fill in the Blanks, Idioms & Phrases, Cloze Passages, and Comprehension Passages.	

Skill Development Activities:
Various activity-based learning methods such as problem-solving exercises, case studies, role-playing, debates, group discussions, mock tests, and assessments can be conducted, in addition to any other relevant activities for the course to ensure effective learning.

References:

- Latest editions of books such as Quantitative Aptitude for Competitive Examinations,
- Modern Approach to Verbal and Non-Verbal Reasoning,
- Quick Learning Objective General English - R.S.Agarwal, Arihant Publications,

Web links:

- List of Government Competitive Exams, Jobs & Vacancies (exampur.com)
- https://www.safalta.chttps://www.javatpoint.com/aptitude/quantitative
- https://free.aicte-india.org/Quantitative-Aptitude-Basics.php
- https://onlinecourses.nptel.ac.in/noc20_hs19/preview
- https://www.udemy.com/course/reasoning-verbal-non-verbal/
- https://www.careerride.com/mcq/logical-reasoning-quantitative-aptitude-mcq-questions
- https://www.admitkard.com/blog/analytical-reasoning/

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Course Articulation Matrix - 23EMPECO01

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO 10	PO 11	PO 12
CO1	3	3	2	2	3	1	2	2	1	2	2	2
CO2	3	3	3	3	3	2	2	2	2	2	3	2
CO3	3	3	3	3	3	2	2	2	2	2	3	2
CO4	3	3	3	3	3	2	2	2	2	2	3	2
Weighted Average	3	3	2.75	2.75	3	1.75	2	2	1.75	2	2.75	2

Pedagogy (For DSC Papers)

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Internal Test	50%
Assignment	20%
Presentation/Project	30%
Total	100
Formative Assessment as per University guidelines are compulsory	

Evaluation process for IA Marks

FORMATIVE ASSESSMENT			
	C1	C2	Total
Assessment Occasion/type			
Internal Test	10	10	20
Assignment/seminar	5	-	05
Quiz/GD	5	-	05
Presentation/Project etc	-	10	10
Total	20	20	40
Semester End Exam Theory			60

Evaluation process for IA Marks (for SEC- Employability Skills)

FORMATIVE ASSESSMENT			
	C1	C2	Total
Assessment Occasion/type			
Class Test	20	-	20
Assignment/seminar	-	20	20
Total	20	20	40
Semester End Exam Theory			60

QUESTION PAPER PATTERN (C3) FOR DSC Papers

Maximum Marks: 60 **Duration:** $2\frac{1}{2}$ Hours

PART -A

Answer any Five of the following **5X2 =10**

Sl. No. 1

a.
b.
c.
d.
e.
f.
g.
h.

PART - B

Answer any Six of the following: **6X5 =30**

Sl. No. 2 to 10

PART - C

Answer any Two of the following: **2X10 =20**

Sl. No. 11 to 14

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QUESTION PAPER PATTERN (C3) FOR SEC (Employability Skills)

Maximum Marks: 60 **Duration:** $2\frac{1}{2}$ Hours

PART -A

Answer any Five of the following **5X2 =10**

Sl. No. 1

a.
b.
c.
d.
e.
f.
g.
h.

PART - B

Answer any Six of the following: **6X5 =30**

Sl. No. 2 to 10

PART - C

Answer any Two of the following: **2X10 =20**

Sl. No. 11 to 14

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VI SEMESTER BA

Course Code: 231637	**Course Title:** DSC(12) : International Economics
Course Credit (L:T:P): 4 (4:0:0)	**Teaching Hours/Week:** 4 Hours
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- CO1. Understand the international trade theories and their application in international trade
- CO2. Explain the concept of terms of trade and demonstrate the effect of trade barriers; and displaythe ability to analyse the stages of economic integration
- CO3. Understand the concept of BoP and assess the BoP position and examine the changes in forexrate
- CO4. Analyse the role of International trade and financial institutions & Demonstrate good inter-personal and communication skills through class participation and contributing to critical discussion on trade issues

MODULES	DESCRIPTION	60 Hours
Module I	**International Trade Theories**	**15**
	Meaning and Importance of International trade; Differences between Internal andInternational Trade; Trade Theories: Mercantilist view; Absolute cost and comparative cost advantage theories; Haberler's Opportunity cost theory; Hecksher-Ohlin theory; Leontief's paradox	
Practicum	Assignment on Ricardo's Comparative cost advantage and Leontief's paradox	
Module II	**Terms of Trade and Trade Policy**	**17**
	Terms of trade- Concepts, Factors determining Terms of Trade; Trade Policy: Free trade v/s Protection; Tariffs: Types and effects; Quotas;Anti-dumping.	
Practicum	Debate: Free trade v/s Protection Mini project: Trace the evolution of India towards Economic Integration	
Module III	**Balance of Payments and Capital Flows**	**13**

	Balance of Payments: Concept, Components; Disequilibrium in Balance of Payments: Causes and Measures to correct disequilibrium; Foreign Exchange rate: Meaning and types; determination of Foreign exchange rate: Demand for and Supply of Forex; Purchasing Power Parity (PPP) theory; Capital Flows: Meaning, concept and types of Foreign Investment; Forms of FDI; Advantages and disadvantages of FDI.
Practicum	Prepare India's Balance of Payment statement using recent Economic Survey Assignment on Forms of FDI

Module IV	**International Financial Institutions and Trade Organisations**	**15**
	Bretton Woods Institutions: IMF and IBRD - IDA and IFC: Organization, Objectives, Functions. Evolution of WTO: GATT – principles and objectives; WTO: Organization, Objectives, Functions, Agreements and current issues	
Practicum:	Group Discussion: Effectiveness of IMF and IBRD in developing countries Seminar: Agreements of WTO or current issues of WTO	

References

1	Sodersten. B. (1993): International Economics, MacMillan, 3 Edition, London,
2	Salvatore, D. (2016): International Economies, 12 Edition, Wiley Publication
3	Vaish, M. C. and Sudama Singh (1980): International Economics, 3 Edition, Oxford and IBH Publication, New Delhi.
4	Carbaugh, R. J. (1999): International Economics, International Thompson Publishing, New York
5	Dana, M. S. (2000): International Economics: Study Guide and work Book, 5. Edition,Routledge Publishers, London.
6	Kenen, P. B. (1994). The International Economy, Cambridge University Press, London.
7	Krugman, P.R. and M. Obstfeld (1994): International Economics: Theory and Policy Addison-WesleyPublications.
8	Jackson, JD. (1998) The World Trading System, Cambridge University Press, Mass. Cherunilam,International Economics, TMH, New Delhi.
9	D M Mithani, International Economics, Himalaya, Mumbai.
10	Jhingan M.L.(2016): International Economics, Vrinda Publications Pvt Ltd-Delhi
11	Dwivedi D.N. (2013): International Economics Theory & Policy, Vikas Publishing House Pv.t Ltd.
12	K.C. Rana & K.N. Verma (2017): International Economics ;Vishal Publishing Co.
13	Krishnamurthy H.R (2013) : Antararashtreeya Arthashastra ; (Kannada version), Sapna, Bengaluru

Weblinks:

- https://www.economicshelp.org/blog/58802/trade/the-importance-of-international-trade/
- https://www.economicsdiscussion.net/haberlers-opportunity-cost-theory/haberlers-opportunity-cost-theory-with-assumptions-economics/30770
- https://www.yourarticlelibrary.com/trade-2/7-major-factors-affecting-the-terms-of-trade-economics/11061
- https://testbook.com/banking-awareness/balance-of-payment
- https://www.imf.org/en/About/Factsheets/Sheets/2022/IMF-World-Bank-New
- https://www.wto.org/english/thewto_e/whatis_e/tif_e/utw_chap2_e.pdf

Course Articulation Matrix- 231637

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	3	2	2	2	1	2	2	2	2	2	1
CO2	3	2	2	2	3	2	2	1	2	2	2	2
CO3	3	3	3	3	3	2	2	2	2	2	2	2
CO4	3	3	3	2	2	2	3	2	2	2	2	2
Weighted Average	3	2.75	2.5	2.25	2.5	1.75	2.25	1.75	2	2	2	1.75

Course Code: 231638	**Course Title:** DSC (13): Indian Public Finance
Course Credit (L:T:P): 4 (4:0:0)	**Teaching Hours/Week:** 4 Hours
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

- CO1. Identify the structure of Indian Public Finance & trace the Source and nature of public revenue and expenditure
- CO2. Evaluate the Budget and different concept of deficits
- CO3. Gain Knowledge about the Principles of Public Debt and its management
- CO4. Examine the fiscal and monetary policy, their tools and importance including

  the Indian federal financing system and FinancialCommissions.

MODULES	DESCRIPTION	60 Hours
Module I	**Public Revenue**	**18**
	Direct Tax Revenue - Trends and Patterns of Tax Revenue in India; Direct Tax in India; Personal Income Tax Rates and Slabs**;** Corporate Tax. **Indirect Tax Revenue -** Indirect Taxes in India – Earlier Taxes- VAT and MODVAT; Goods and Services Tax (GST)- Objectives and Classification of GST, Tax Rates of GST; Trends and Patterns of GST; Impact of GST onIndian Economy**;** Tax Reform Commissions.	
Practicum	Collection and analysis of data on Direct tax Collection and analysis of GST from businesses	
Module II	**Public Expenditure**	**15**
	Revenue Expenditure - Classification of Public Expenditure in India**;** Revenue Account Expenditure- Trends and Patterns**;** Capital Account Expenditure-Trends and Patterns**;** Fiscal Responsibility and Budget Management (FRBM) Act**;** Impact of Public Expenditure on Indian Economy**;** Expenditure Reforms Commission (ERC) in India; **Union Budget and Its Analysis -** Meaning and Classification of Budgets; Zero- Based Budget; Composition of Union Budget; Union Budget Analysis (current one); Different Concepts of Deficits- Revenue, Fiscal and Primary Deficits(in brief).	
Practicum	Analysis of Union Budget (Current one)Group Discussion on Budget Deficits	

Module III	**Public Debt and Its Management**	**14**
	Public Borrowings and Debt – Meaning of Public Debt; Trends and Patterns of Central Government Debt; Main Characteristics of Indian Public Debt; Causes of Public Debt in India; **Burden of Public Debt and Management in India -** Meaning of Burden of Public Debt; Importance of Public Debt Management; Principles of Public Debt Management; Repayment of Public Debt in India; Impact of Public Debt on Indian Economy.	
Practicum	Assignment to write on Indian Public Dent and sources of repayment Group Discussion on Burden of Public Debt	
Module IV	**Fiscal and Monetary Policies and Federal Finance in India**	**13**
	Fiscal and Monetary Policy in India: trends in fiscal deficits. **Indian Federal Finance -** Meaning and Importance- Allocation of Resources- Division of Functions and Resources; Principles of Federal Finance; Current Finance Commission and its Recommendations.	
Practicum	Group Discussion about the Role of Fiscal and Monetary Policies incontrolling inflation Assignment to write the State List, Union List and Concurrent list	

References	
1	Bhatia H L (2021): Public Finance, S. Chand and Co., New Delhi.
2	Lekhi R.K (2020): *Public Finance*, Kalyani Publishers, New Delhi.
3	Musgrave R.A and Musgrave P.A (2017): *Public Finance in Theory and Practice*, Mcgraw- Hill Kogakusha, Tokyo.
4	Om Prakash 2021): (*ic Public Economics: Theory a practice*, Vishal Publishing Co. Ludhiana.
5	S.K. Singh (2019): *Public Economics: Theory and Practice* S. Chand and Co., New Delhi.
6	Tyagi, B.P (2018)*: Public Finance*, Jai Prakash Nath and Company, Meerut, India.

Web links:

- http://www.simplynotes.in/e-notes/mcomb-com/public-finance/tax
- https://cleartax.in/s/gst-law-goods-and-services-tax
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- https://www.yourarticlelibrary.com/economics/public-expenditure-meaning-importance-classification-and-other-details/38100
- https://prepp.in/news/e-492-public-debt-indian-economy-notes
- https://www.shaalaa.com/question-bank-solutions/explain-the-principles-of-federal-finance-federal-finance_223404

Course Articulation Matrix -231638

POs / COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	P0 9	PO 10	PO 11	PO 12
CO1	3	3	3	3	3	3	2	3	2	2	3	2
CO2	3	3	3	2	3	2	2	3	2	2	3	2
CO3	3	2	3	3	3	3	2	2	2	2	3	2
CO4	3	3	2	3	3	2	2	2	2	2	2	2
Weighted Average	3	2.75	2.75	2.75	3	2.5	2	2.5	2	2	2.75	2

VI SEMESTER BA

Course Code: 231639	**Course Title:** DSC14: Environmental Economics
Course Credit (L:T:P): 4 (4:0:0)	**Teaching Hours/Week:** 4 Hours
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes (COs):

- CO1. Examine the linkages between Environmental Degradation and Economic Development
- CO2. Develop an informed view regarding the potential of economics to help societies achieve theirenvironmental goals
- CO3. Evaluate the role of Citizens and NGOs in Environmental Protection.
- CO4. Analyze environmental problems and to assess environmental policies

MODULES	DESCRIPTION	60 Hours
Module I	**Environment and Ecology**	**15**
	Meaning, Nature and Scope of Economics of Environment; Linkages between Environment and the Economy; Environmental Kuznets curve; Environmental Stress; Population and Environment; Poverty and Environment; Meaning and elements of ecology; Biotic and Abiotic components; Material Balanced Principle (Entropy law); Rio Summit; Green Accounting.	
Practicum:	Making charts relating to SDGs or Assignments on environment-economy linkages at the local level.	
Module II	**Natural Resources Scarcity and Conservation**	**15**
	Meaning and Characteristics of Renewable and Non-renewable resources;Non-Renewable Resources and the problem of depletion ; Resource Scarcity and Economic Growth (Limits to Growth Model); Energy and Economic Development; Energy resources and their Pricing; Alternative energy sources; Conservation of Natural Resources- 3Rs – Reduce, Reuse and Recycling Measures	
Practicum:	Identifying local resources; Project on resource conservation (esp. water) at the College level; Discussion on Limits to Growth	
Module III	**Environmental Pollution**	**15**
	Types of Pollution –Air, Water, Soil, Noise - Causes and consequences. Climate change, Global warming, Greenhouse Effect-Ozone depletion- Carbon footprint. Environmental hazards: rivers, land: floods, drought, acid rain. Environmental impact assessment (cost-benefit analysis).	

Practicum:	Visiting the Pollution Control Board office and observing its functions	
Module IV	**Environmental Policy and Regulations**	**15**
	Environmental regulatory system in India; Pollution Control Boards and their Functions; Provisions of the Environmental Protection Act, 1986;Environmental Movements in India (Chipko); Role of Citizens and NGOs in Environmental Protection. Global agenda for environmentalprotection.	
Practicum:	Assignments on types of pollution in local areas; Seminars on climate change and its consequences; visiting the Pollution Control Board officeand observing its functions	

References
Bhattacharya, R.N (Ed) (2001), *Environmental Economics: An Indian Perspective*, Oxford University Press.
Karpagam M. (1993), *Environmental Economics*, Sterling Publishers, New Delhi.
Shankar, U, (2001), *Environmental Economics*, Oxford University Press, New Delhi.
Singh, Katar and Anil Shisodia (2007): *Environmental Economics: Theory and Applications*, SagePublications, New Delhi
Mahajan V.S (2003): *Environmental Protection – Challenges & Issues*, Deep & Deep Publishers New Delhi
Sengupta, R.P. (Ed.) (2001), *Ecology and economics: An Approach to Sustainable Development*, Oxford University Press, New Delhi.
Nick Hanley, Jason F, Shogren and Ben White (2005): *Environmental Economics in Theory and Practice*, Macmillan India Ltd.

Web links

- https://www.geeksforgeeks.org/link-between-the-economy-and-the-environment-of-a-country/
- https://www.slideshare.net/Sharin1234/material-balance-model
- https://www.environmentalpollution.in/energy/characteristics-of-renewable-and-nonrenewable-
- https://education.nationalgeographic.org/resource/alternative-energy-use/
- https://www.vedantu.com/biology/types-of-pollution
- https://www.mondaq.com/india/waste-management/624836/environment-laws-in-india

Course Articulation Matrix - 231639

PO's / CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO 8	P0 9	PO 10	PO 11	PO 12
CO1	3	3	3	3	3	3	3	3	2	2	2	3
CO2	2	2	2	2	2	2	3	3	2	2	2	3
CO3	2	2	2	3	3	2	2	3	2	2	2	3
CO4	2	2	2	3	3	2	2	3	2	2	2	2
Weighted Average	2.25	2.25	2.25	2.25	2.75	2.25	2.5	3	2	2	2	2.75

VI SEMESTER BA

Course Code: 231640	**Course Title:** DSC14.1: Economic Thoughts of B R Ambedkar
Course Credit (L:T:P): 4 (4:0:0)	**Teaching Hours/Week:** 4 Hours
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Duration of Exam: $2\frac{1}{2}$ Hours	**Summative Assessment Marks:** 60

Course Outcomes

- CO1. derive inspiration from the life and works of B R Ambedkar
- CO2. Appreciate the socio-economic scenario during Ambedkar' period and compare it with presentday
- CO3. Comprehend the contributions of Ambedkar on various economic aspects
- CO4. Assess the economic views of Ambedkar in the light of present-day socio-economic problems & develop the traits of critical thinking.
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MODULES	DESCRIPTION	60 Hours
Module I	**Ambedkar's views on Economy, Society and Equity**	**15**
	Brief outline of Ambedkar's life and career; Ambedkar's views on: a) economy and society; b) role of state c) Socialism and State Socialism; d) Women Empowerment , e) Objectives of economy: growth & equity; Socio-economic inequality: Economics of Caste, discrimination and deprivation; reforms suggested there in by Dr Ambedkar: Constitutional Provisions: Hindu code Bill	
Practicum	Assignment: Socio-economic inequality and status of affirmative actions in India	
Module II	**Thoughts of Ambedkar on Agriculture**	**15**
	Ambedkar's views on: Agrarian Economy; Consolidation of land holdings and land revenue; Comparison with Ricardian view; Collective farming; views on land-ownership and landlessness; Nationalization of land and ceiling on land holdings; Surplus labour utilisation in agriculture and capital formation;	
Practicum	Mini Project: Using the Agriculture census data,chart the average size of operational holdings (by group) for different social classes in your tehsils and district (for2001-2 and 2015-16); compare with the corresponding figures of state and nation.	

Module III	Ambedkar on Industrialisation and Planning	15
	Ideas on Industrialisation; views on types of industries Labour: views on labour exploitation and labour reforms; Social security Planning: Measures to develop Irrigation and Power sector: River linking;	
Practicum	Debate 1): Small & cottage industries of rural areas v/s large scale industries in urban areas Debate 2) Industrialize or perish v/s Industrialize and perish	

Module IV	Ambedkar's contribution to Fiscal and Monetary Economics	15
	Fiscal Economics: study of sources of revenue; canons of expenditure Monetary Economics: Price stability and exchange rate stability; Currencyreforms.	
Practicum	Seminar: Ambedkar's views on 'The Problem of Rupee'	

References (In order of importance of usage)

1	Heggade O D (1998) - Economic Thoughts of B R Ambedkar
2	Heggade O D – Ambedkar Vichara Dhare, Arjun Pub. House, Mysuru
3	Speeches and writing of Dr. B R Ambedkar, W R Mujawar (4 Volumes)
4	Dr. Ambedkar Bhashanagalu & Barahagalu - Vol 1, Vol.2 Part 1& 2, Vol 3, Vol 6 Part 1& 2, Vol 10 Part 1, 2, & 3, Vol 12 part 2, Pub by Govt of Karnataka
5	Nagar and Nagar (2010), Economic Thoughts and Policy of Dr. B. R. Ambedkar
6	Permaiah, P.K and Sateesh Reddy (1994) – Dr Ambedkar's Economic Philosophy, Delta Pub, NewDelhi
7	Dongre M K – Economic Thought of Dr B R Ambedkar
8	Ramaiah Reddy (ed) (1987)- Dr B R Amdedkar's Economic Philosophy
9	Sukhadeo Thorat(1998), Ambedkar's Role in Economic Planning and Water Policy, Shipra Publications, New Delhi.
10	Ambedkar B. R. (1936) Annihilation of Caste, Government of Maharashtra, Writings and Speeches ofDr B R Ambedkar, Volume 1, Mumbai.

Web links:

- https://www.brambedkar.in/annihilation-of-caste/
- drambedkar.co.in/wp-content/uploads/books/category1/13the-problem-of-the-rupee.pdf
- https://www.mea.gov.in/Images/attach/amb/Volume_01.pdf
- https://indiacsr.in/dr-babasaheb-ambedkars-thoughts-on-agriculture/
- https://www.moneycontrol.com/news/opinion/opinion-why-ambedkars-views-on-education-and-industry-are-relevant-today-3258761.html

Course Articulation Matrix - 231640

PO's / CO's	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	P0 9	PO 10	PO 11	PO 12
CO1	2	2	2	2	2	3	2	2	2	2	2	2
CO2	2	2	2	2	2	2	3	3	2	2	2	3
CO3	2	3	2	2	3	3	2	2	2	2	2	2
CO4	2	2	2	2	3	2	2	2	2	2	3	2
Weighted Average	2	2.25	2	2	2.5	2.5	2.25	2.25	2	2	2.25	2.25

Pedagogy (For DSC Papers)

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Internal Test	50%
Assignment	20%
Presentation/Project	30%
Total	100
Formative Assessment as per University guidelines are compulsory	

Evaluation process for IA Marks

FORMATIVE ASSESSMENT			
	C1	C2	Total
Assessment Occasion/type			
Internal Test	10	10	20
Assignment/seminar	5	-	05
Quiz/GD	5	-	05
Presentation/Project etc.	-	10	10
Total	20	20	40
Semester End Exam Theory			60

QUESTION PAPER PATTERN (C3) for DSC Papers

Maximum Marks: 60 **Duration:** $2\frac{1}{2}$ Hours

PART -A

Answer any Five of the following **5X2 =10**

Sl. No. 1

a.
b.
c.
d.
e.
f.
g.
h.

PART - B

Answer any Six of the following: **6X5 =30**

Sl. No. 2 to 10

PART - C

Answer any Two of the following: **2X10 =20**

Sl. No. 11 to 14

==========

Internship

Semester: VI

Course Code: 23INTECO01	**Course Title:** SEC(2) **-** Internship
Course Credits: 02	**Hours of Teaching/Week:**
Total Contact Hours: 90 Hours Internship	**Formative Assessment Marks:** 100 Marks (C1=50+C2=50)

Note: This course will run as per the guidelines defined by the University of Mysore, Mysuru and the same is approved by BoS, Economics, SBRR Mahajana First Grade College, (A) Mysuru.

Course Outcomes (COs):

CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.

CO2: Sharpen the domain knowledge and provide core competency skills by developing Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

Course Articulation Matrix – 23INTECO01

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	3	2	2	3	3	3	2
CO 2	3	3	3	3	3	2	2	2	3	3	3	3
Weighted Average	3	3	3	3	3	2.5	2	2	3	3	3	2.5

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively for the semester. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

The student is evaluated for 100 marks in C1 and C2 as per the following scheme:

Project Progress Presentation (**C1**): 50 marks

Project Development and Report (**C2**): 50 marks

Assessment Criteria	**Marks**
Project Presentation Skills	50
Project Development Skills and Report	50
Total	**100**

Proceedings of the BOS Meeting

Academic Year: 2023-24

Name: BoS – I Meeting

Date: 26.08.2023

Time: 10:30 AM

Place: AVC- 3, SBRR Mahajana First Grade College (A), Mysuru.

Total Number of Members: 07 + 01

(07 Members attended the offline meeting, and one of the Members joined the meeting through Virtual mode)

Agenda:

1. Making necessary and appropriate changes in the syllabi of V &VI Semester BA and to seek the approval for the same. (DSC Papers)
2. Seeking approval for the Question paper pattern for V & VI Sem BA Program
3. Seeking approval for the List of Examiners for the year 2023-24
4. Seeking approval for the implementation of OBE for the various courses of V &VI Semester BA program
5. Seeking approval for Employability skills and Internship courses (SEC) for V & VI Semester BA classes respectively.

Proceedings of the Meeting:

1. BOS Meeting in Economics was started at 10.30am in AVC-3, with the presence of all the panel members
2. HoD welcomed all the members and briefed about the implementation of OBE for the various courses of V &VI Semester BA
3. Made a mention that syllabi of V &VI Sem BA Programme may be changed only to the extent of 20 to 25% as per the instruction of Parent University.
4. It was resolved by the members that the title of the units, chapters and Credits of the courses to be retained without any modifications.
5. Employability skills (SEC) for V Sem and Internship for VI Sem BA Students shall be taught as per the Curriculum notified by the UoM, Mysuru.

6. Some suitable changes were suggested by the members with respect to some of the topics which were repeated in the course DSC-9 & DSC -11

Course titles, chapter titles, number of teaching hours and credits have been retained. Some minor changes have been incorporated with respect to sub topics of the syllabus.

Changes incorporated in the syllabus of V & VI Sem BA:

- Under V Sem BA DSC-9 in Module-2 topics like Taxable capacity and Principles of public expenditure have been removed.
- In module-3 the Post Keynesian views and in module-4 Process of budget have been removed. MDPI has been included
- Under DSC-10, in module -1, Inequality and poverty, its meaning as well as causes and Human Poverty index have been removed.
- In module-2 the experts suggested to teach the Harrod – Domar Model in brief.
- In module-3 Migration theory: Harris Todaro Model is included.
- Under DSC-11, the topics removed from module-1 are Credit creation and Monetary policy.
- In module-2, impact of Global events on Indian banks & Investment services in capital market have been removed.
- Under VI Sem DSC-12, All modules retained without any modification
- Under DSC-13, in module-2, Budget and its analysis have been removed.
- Under DSC-14, module-3 and Module-4 same topics are repeated under both the modules. Hence, university nominee of our BOS Prof. Navitha Thimmaiah has suggested to copy the syllabus modified by the University of Mysore.

7. Implementation of OBE for various courses of V & VI Sem BA Program has been approved
8. Sought the approval for the Question paper pattern of V & VI Sem BA Program
9. List of Examiners for the Year 2023-24 also approved.

Note:

- Syllabus of V and VI semester BA are subject to changes based on the syllabus provided by parent university, accordingly some minor changes are likely to be made in the DSC of both the semesters.
- During V Semester, DSC 9,10 & 11will be offered for one set of students, alternatively, DSC -9,10 & 12 will be offered for another set of students. Same is applicable to VI sem BA Program. However, DSC-9 & 10 are compulsory Courses.

Dept. of Economics

Approved List of Examiners for 2023-24

Sl. No.	Name	Designation	Address for communication
01	Venkatalakshmi M N	HoD & Associate Professor	SBRR Mahajana First Grade College'J L Puram, Mysuru-12
02	Dr.Pushparani P G	Assistant Professor	SBRR Mahajana First Grade College'J L Puram, Mysuru-12
03	Siddappa R	Assistant Professor	SBRR Mahajana First Grade College'J L Puram, Mysuru-12
04	Chaluve Gowda S M	Assistant Professor	SBRR Mahajana First Grade College'J L Puram, Mysuru-12
05	Prof. Sujatha Devi	Associate Professor	St. Philomina's College (A)
06	Dr.Naga Bhushan R	Associate Professor	GFG College, Kuvempunagar. Mysuru.
07	Dr. Praveen Saldana	Assistant Professor	St. Philomina's College (A)
08	Prof. Puttashetty	Associate Professor	GFG College, Hunsuru Mysuru
09	Prof. Jagadish B	Associate Professor	GFG College Nanjangud Tq, Mysuru.
10	Prof. Chamaraju K	Associate Professor	GFG College, Gundlu pet
11	Smt.Lakshmi S S	Assistant Professor	GFG College, Bannur, T.Narasipura (T)Mysuru-571101
12	Dr. Puttaraju	Associate Professor	GFGC, Kuvempunagar, Mysuru
13	Smt. Vijayalakshmi G	Assistant Professor	Maharani's Arts College For Women, Mysuru
14	Smt. Soumya	Assistant Professor	St. Philomina's College(A)
15	Dr. Rashmi	Associate Professor	Maharaja College, UOM, Mysuru.

16	Prof. Puttaswame Gowda	Associate Professor	Bharathi College Bharthi Nagara ,Mandya.
17	Dr.Shashi Kala	Assistant Professor	Maharani's Arts College For Women, Mysuru
18	Dr. T Ramesh	Associate Professor	Basudev Somani College,Kuvempu nagar, Mysuru-23
19	Dr. Kiran S P	Assistant Professor	H K Veeranna gowda Degree College, Maddur- 571428
20	Prof. Muralidhar K D	Associate Professor	GFGC for Women, M G Road,Hassan-573201
21	Dr. Prakash N	Associate Professor	Maharanies Arts college for Women. Mysuru-570005
22	Prof. Madhusudhan	Assistant Professor	Boys FGC, Autonomous, Mandya
23	Dr. Shruthi G	Assistant Professor	Teresian College, Mysuru - 11
24	Dr. Shivaprasad E	Assistant Professor	Maddaneshwara First Grade College, Kabballi

Board of Studies - Department of Economics – 2023-24

Sl. No.	Designation	Name	Signature
01	University Nominee	**Dr. Navitha Thimmaiah,** Professor of Economics DoS in Economics & Cooperation, UoM, Mysuru.	
02	Subject expert	**Dr. Ramakrishna B M** Professor of Economics University college Hampanakatta (Constituent college of Mangalore University) Mangaluru-575001	
03	Subject expert	**Dr. E. Thippeswamy** Professor of Economics Field Marshal K. M. Cariappa College (Constituent college of Mangalore University) Madikeri-571201	- online mode -
04	HoD & Faculty Member	**Venkatalakshmi M N** Associate Professor, SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	
05	Faculty Member	**Dr. Pushparani P G** Assistant Professor SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	
06	Faculty Member	**Siddappa R** Assistant Professor SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	
07	Faculty Member	**Chaluvegowda S M** Assistant Professor SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru -12	
08	Subject Expert & Alumnus	**Dr. Roopa Patavardhan** Assistant Professor School of Business studies and Social Sciences, Christ(Deemed to be University) Hulimavu, Bengaluru-76	
09	Industry Person	**Nikhil Maruthi** Stake Holder LLP Partner,Solution Infinite Media Pvt.Ltd, T-301, Chicago Avenue, Cunningham Road,Opp.Fortis Hospital, Bengaluru-560001	— ABSENT —

Mahajana Education Society (R.)

Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012

Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade

College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF ENGLISH

UG ☑

PG ☐

NEP Syllabi for I and II Semester

English Language - 2 (AECC) and Open Elective Course

2021-22

DEPARTMENT OF ENGLISH

Motto

Write better, speak better

Vision

To mould the students to confront the global challenge

Mission

To inculcate values to become better
human beings through literature

Program Outcome (PO) Attributes

PO1	Domain Knowledge
PO2	Problem Analysis
PO3	Design/Development of Solutions
PO4	Investigation and Research
PO5	Use of Modern Techniques/Tools
PO6	Impact on Society
PO7	Environment and Sustainability
PO8	Moral and Ethical Values
PO9	Individual and Team Work
PO10	Communication
PO11	Project Management and Finance
PO12	Lifelong Learning

General Objectives

- Comprehension of written and spoken English
- Knowledge of various elements of grammar to write better and speak better
- Effective use of English for various purposes: academic, business, professional and social media
- Develop interest in appreciation of literature and its significance to the society
- Understand human life better
- Ability to use English in real life situations

List of Board of Studies Members

Sl. No.	Category	Name Smt./Sri	Designation	Address for Communication	E-mail and Mobile No.
1	HoD & Chairman	Manjunath K R	Assistant Professor	SBRR Mahajana First Grade College, Mysore	manjunathkr.fgc@mahajana.edu.in 9448493596
2	Faculty Member	Geetha D	Assistant Professor	SBRR Mahajana First Grade College, Mysore	geethalit@rediffmail.com 9945653221
3	Two Experts from external university	1. Dr. Nataraj G	Assistant Professor	DoS in English, KSOU, Mysuru	Nataraj.g.ukkalagere@gmail.com 9741219820
		2. Dr. B.N. Shreekerthy	Assistant Professor	DoS in English, Jnanabharathi, University of Bangalore, Bengaluru	drskeerthy@gmail.com 9739012854
4	Nominee by the Vice Chancellor	Dr. Vanamala S M	Associate Professor	Mandya P G Centre, Mandya	vanamalasm861@gmail.com 9449789748
5	Alumnus	Ms. Spoorthi C S	Assistant Professor	St. Joseph's College, Hunsuru	cssporrthi@gmail.com 8867091969

Course Structure (NEP 2020)

English Language (AECC) and Open Elective (OE)
I Year for all Progams
I Semester

Course Type, Code and Title	L:T:P	Credits	Teaching Hours per Week	Total No. of Hours	Maximum Marks			Total Marks	Exam Duration
					IA		Exam		
					C1	C2	C3		
AECC- Poetry, Prose and Language Component – I **BA / BSc / BCA** – 21ENG119 **BCom/BBA(All)/-** 21ENG120	2 : 1 : 0	3	04	56	20	20	60	100	2½
OE (I)- Functional English Grammar and Study Skills 21OEENG101	3 : 0 : 0	3	03	42	20	20	60	100	2½
II Semester									
AECC -Poetry, Prose and Language Component – II **BA / BSc / BCA** – 21ENG219 **BCom/BBA(All)/-** 21ENG220	2 : 1 : 0	3	04	56	20	20	60	100	2½
OE (II) – Spoken English for Corporate Jobs 21OEENG201	3 : 0 : 0	3	03	42	20	20	60	100	2½

Annexure: English Language Syllabus

Syllabus For Ability Enhancement Compulsory Course (AECC)
ENGLISH LANGUAGE (L2)

For Undergraduate Programs offered in

Faculty of Arts and Faculty of Science (BA, BSc., BCA)

Title of the Paper – Poetry, Prose and Language Component-1

Semester I **Course Code:** **BA / BSc. / BCA 21ENG119**	**Course Title:** **Poetry, Prose and Language Component-1**
Course Credits: 03 (2:1:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1: Obtain knowledge of literary genres and devices

CO2: Familiarity with representative literary texts with attention to historical, geographical, cultural contexts. Inquire into the socio-political background and determine its impact on the society.

CO3: Develop the skill to interpret, analyze, criticize and to express creatively for a variety of purposes and audience.

CO4: Gain an insight into the aesthetic values of literature and relate the didactic purpose of literature to lead a successful life.

CO5: Heightened awareness of correct usage of English grammar in written and oral Communication.

Course Content

POETRY **20 hrs**

1. When in Disgrace – William Shakespeare
2. The Pulley – George Herbert
3. The Quiet Life – Alexander Pope
4. Fidelity – William Wordsworth
5. The Man He Killed – Thomas Hardy
6. Freedom – Rabindranath Tagore
7. Refugee Blues – W. H. Auden
8. The Cold Within – James Patrick Kinney

PROSE **16 hrs**

1. With the Photographer- Stephen Leacock
2. Prospects of Democracy in India- Dr. B. R. Ambedkar
3. What is Science? – George Orwell
4. Fool's Paradise- Isaac Bashevis Singer

LANGUAGE COMPONENT AND LITERARY ACTIVITY **20 hrs**

1. Punctuation
2. Articles
3. Prepositions
4. Verb in relation to Tense, Person and Number of the Subject
   (Subject- Verb Agreement/Concord)

TEXT BOOK

REVERBERATION – 1 for I Semester Bachelor's Degree, University of Mysore, Mysuru

References:

- https://orelt.col.org/module/unit/4-grammar-improving-composition-skills
- https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers
- Jain Charul, Pradyumnasinh Raj & Yunus Karbharj. English Skills for Academic Purposes, Macmillan Education. London, 2017
- Murphy, Raymond, Grammar in Use, CUP, 2019, 5th Edition
- Swan Michael, Basic English Usage, OUP
- Thomson A J, A V Martinet, A Practical English Grammar, Oxford University Press

Course Articulation Matrix - BA / BSc. / BCA 21ENG119

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	3	-	1	-	-	2	1	3	-	3	1	3
CO 2	3	3	2	3	1	3	3	3	1	3	1	3
CO 3	2	3	1	1	3	3	2	2	1	3	1	3
CO 4	2	2	2	-	-	3	2	3	1	3	-	3
CO 5	3	3	2	-	3	2	-	-	1	3	-	3
WA	**2.6**	**2.7**	**1.6**	**2**	**2.3**	**2.6**	**2**	**2.7**	**1**	**3**	**1**	**3**

Annexure: English Language Syllabus

Syllabus For Ability Enhancement Compulsory Course (AECC)
ENGLISH LANGUAGE (L2)

For Undergraduate Programs offered in

Faculty of Commerce and Management

(B.Com., BBA)(BBA (H & H) (BBA Aviation & International Tourism)

Title of the Paper – Poetry, Prose and Language Component-1

Semester I **Course Code:** **B.Com. / BBA (All) 21ENG120**	**Course Title:** **Poetry, Prose and Language Component-1**
Course Credits: 03 (2:1:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1: Obtain knowledge of literary genres and devices

CO2: Familiarity with representative literary texts with attention to historical, geographical, cultural contexts. Inquire into the socio-political background and determine its impact on the society.

CO3: Develop the skill to interpret, analyze, criticize and to express creatively for a variety of purposes and audience.

CO4: Gain an insight into the aesthetic values of literature and relate the didactic purpose of literature to lead a successful life.

CO5: Heightened awareness of correct usage of English grammar in written and oral Communication.

Course Content

POETRY **20 hrs**

1. When Forty Winters Shall Besiege Thy Brow (Sonnet 2) – William Shakespeare
2. The World is Too Much with Us– William Wordsworth
3. A Wagon of Shoes – Avrom Sutzkever
4. Nine Gold Medals- David Roth
5. False Religion- Rabindranath Tagore
6. Avarice – George Herbert
7. O, My Luve's like a Red, Red Rose- Robert Burns
8. On Killing a Tree – Gieve Patel

PROSE **16 hrs**

1. The Miser – George Orwell
2. The Storyteller – Saki
3. Going Green – Ramachandra Guha
4. The Position of Women in Hinduism and Buddhism- Dr. B. R. Ambedkar

LANGUAGE COMPONENT AND LITERARY ACTIVITY **20 hrs**

1. Punctuation
2. Articles
3. Prepositions
4. Verb in relation to Tense, Person and Number of the Subject
   (Subject- Verb Agreement/ Concord)

TEXT BOOK

RESPELENDENCE – 1 for I Semester Bachelor's Degree, University of Mysore, Mysuru

References:

- https://orelt.col.org/module/unit/4-grammar-improving-composition-skills
- https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers
- Jain Charul, Pradyumnasinh Raj & Yunus Karbharj. English Skills for Academic Purposes, Macmillan Education. London, 2017
- Murphy, Raymond, Grammar in Use, CUP, 2019, 5th Edition
- Swan Michael, Basic English Usage, OUP
- Thomson A J, A V Martinet, A Practical English Grammar, Oxford University Press

Course Articulation Matrix B.Com. / BBA (All) 21ENG120

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	3	-	1	-	-	2	1	3	-	3	1	3
CO 2	3	3	2	3	1	3	3	3	1	3	1	3
CO 3	2	3	1	1	3	3	2	2	1	3	1	3
CO 4	2	2	2	-	-	3	2	3	1	3	-	3
CO 5	3	3	2	-	3	2	-	-	1	3	-	3
WA	**2.6**	**2.7**	**1.6**	**2**	**2.3**	**2.6**	**2**	**2.7**	**1**	**3**	**1**	**3**

Formative Assessment for I Semester Common to all Programs	
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	20
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	**40**

Formative Assessment = 40 Marks

Term End Examination = 60 Marks

Total = 100 Marks

Question Paper Pattern for Semester End Examination Common to all Programs

Language English – I

Title of the Paper: Poetry, Prose and Language Component-I

Time: 2½ hours Max. Marks: 60

I Answer <u>EIGHT</u> of the following Questions in a Word, a Phrase or a sentence each: 8x1=8

a)
b)
c)
d)
e)
f)
g)
h)
i)
j)
k)
l)

II Annotate THREE of the following: 3x4=12

a)
c)
d)
e)
f)

III Answer <u>TWO</u> of the following: 2x5=10

a)
b)
c)
d)

IV Answer <u>TWO</u> of the following: 2x5=10

a)
b)
c)
d)

V	**Language Component:**	**2x5=10**
a)	**Punctuate the following:**	**5x1=5**
i)		
ii)		
iii)		
iv)		
v)		
b)	**Filling the Blanks with appropriate Articles:**	**5x1=5**
i)		
ii)		
iii)		
iv)		
v)		
c)	**Filling the Blanks with appropriate Prepositions:**	**5x1=5**
i)		
ii)		
iii)		
iv)		
v)		
d)	**Choose the correct form of the Verb:**	**5x1=5**
i)		
ii)		
iii)		
iv)		
v)		

**** *** ****

Annexure: English Open Elective Syllabus - I

For all Undergraduate Programs

Title of the Paper-Functional English Grammar and Study Skills

Semester I **Course Code: 21OEENG101**	**Course Title: Functional English Grammar and Study Skills**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1: Knowledge of elements of grammar for better written and oral communication.

CO2: Enhanced ability in rudiments of written process for functional uses of English for various purposes- personal, academic and business.

CO3: Equipped with the mechanics of effective reading skills.

Course Content

Section I: Functional English Grammar

1. Grammar of Spoken and Written English
2. Basic Sentence Patterns in English
3. Analysis of Sentence Patterns (SVO, SV, SVOC, SVOA, SVO A/C)
4. Functions of Various Types of Phrases: Noun Phrases, Verb Phrases, Adjective Phrases, Adverbial Phrases, Prepositional Phrases
5. Functions of Clauses: Noun Clause, Adjective Clause and Adverbial Clause and Prepositional Clauses
6. Verbs – Tense and Aspects, Modal Verbs, Functions and Uses

Section II: Writing Skills

1. Writing as a Skill–Its Importance, Mechanism of Writing, Words and Sentences, Paragraph as a Unit of Structuring the Whole Text, Analysis of Paragraph
2. Functional Uses of Writing: Personal, Academic and Business
3. Writing Process: Planning a Text, Finding Materials, Drafting, Revising, Editing, Finalising Draft
4. Models of Writing: Expansion of Ideas, Dialogue Writing, Drafting an Email

Section III: Reading Skills

1. Meaning and Process of Reading
2. Strategies and methods to Improve Reading Skill
3. Sub-skills of Reading: Skimming, Scanning, Extensive Reading, Intensive Reading

References:

- Geoffrey Leech and Svartik. *Communicative Grammar English*, Pearson
- Geoffrey Leech. *English Grammar for Today*, Palgrave
- Leena Sen. *Communication Skills*, Princeton Hall
- Prasad P. *The Functional Aspects of Communicative Skills*.
- Vandana Singh. *The Written Word*, OU

Course Articulation Matrix - 21OEENG101

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	3	-	-	-	1	2	1	1	2	2	1	3
CO 2	3	1	1	3	1	2	1	1	3	3	1	3
CO 3	3	1	-	3	1	2	1	1	3	3	1	3
WA	3	1	1	3	1	2	1	3	2.6	2.6	1	3

Formative Assessment for I Semester Common to all Programs	
Assessment Occasion/type	**Weightage in Marks**
First InternalTest	20
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	**40**

FormativeAssessment = 40 Marks

Term End Examination = 60 Marks

Total = 100 Marks

Question Paper Pattern for Semester End Examination Common to all Programs

English Open Elective-I

Title of the Paper- Functional English Grammar and Study Skills

Time: 2½ hours Max. Marks: 60

I Answer TEN of the following questions in about 2-3 sentences : 10x2=20
(12 questions given should cover all the sections)

a)
b)
c)
d)
e)
f)
g)
h)
i)
j)
l)
m)
n)
o)

II Write short notes on Four of the following: 4x5=20
(6 Questions to be given covering all sections)

a)
b)
c)
d)
e)
f)

III Answer the following: 2x5=10

a) Write a dialogue (a situation to be given)

b) Write a Paragraph on:

IV Answer One of the following: 1x10=10

(Two concepts to be given from any two sections)

a)
b)

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Annexure: English Language Syllabus

Syllabus For Ability Enhancement Compulsory Course (AECC)
ENGLISH LANGUAGE (L2)

For Undergraduate Programs offered in

Faculty of Arts and Science (BA, BSc, BCA)

Title of the Paper – Poetry, Prose and Language Component-II

Semester II **Course Code:** **BA / BSc. / BCA 21ENG219**	**Course Title:** **Poetry, Prose and Language Component-II**
Course Credits: 03 (2:1:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1: Obtain knowledge of literary genres and devices

CO2: Familiarity with representative literary texts with attention to historical, geographical, cultural contexts. Inquire into the socio-political background and determine its impact on the society.

CO3: Develop the skill to interpret, analyze, criticize and to express creatively for a variety of purposes and audience.

CO4: Gain an insight into the aesthetic values of literature and relate the didactic purpose of literature to lead a successful life.

CO5: Heightened awareness of correct usage of English grammar in written and oral Communication.

Course Content

POETRY **20 hrs**

1. How Do I Love Thee? (Sonnet 43)- Elizabeth Barrett Browning
2. Thou Art Indeed Just, Lord – Gerard Manley Hopkins
3. The Laboratory - Robert Browning
4. No Men are Foreign - James Kirkup
5. Caged Bird – Maya Angelou
6. The Bread of the People – Bertolt Brecht
7. Bankers are like Anybody Else - Ogden Nash
8. Stammer- Satchidananda

PROSE **16 hrs**

1. A Devoted Son – Anita Desai
2. Social Responsibilities of a Scientist- Bertrand Russell
3. The Story of an Hour- Kate Chopin
4. Pandit Jasraj- Captain Gopinath

LANGUAGE COMPONENT AND LITERARY ACTIVITY **20 hrs**

1. Adjectives
2. Adverbs
3. Linkers (Conjunctions)
4. Words Often Confused (Text based)

TEXT BOOK

RESPELENDENCE – II for II Semester Bachelor's Degree, University of Mysore, Mysuru

References:

- https://orelt.col.org/module/unit/4-grammar-improving-composition-skills
- https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers
- Jain Charul, Pradyumnasinh Raj & Yunus Karbharj. English Skills for Academic Purposes, Macmillan Education. London, 2017
- Murphy, Raymond, Grammar in Use, CUP, 2019, 5th Edition
- Swan Michael, Basic English Usage, OUP
- Thomson A J, A V Martinet, A Practical English Grammar, Oxford University Press

Course Articulation Matrix - BA / BSc. / BCA 21ENG219

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	3	-	1	-	-	2	1	3	-	3	1	3
CO 2	3	3	2	3	1	3	3	3	1	3	1	3
CO 3	2	3	1	1	3	3	2	2	1	3	1	3
CO 4	2	2	2	-	-	3	2	3	1	3	-	3
CO 5	3	3	2	-	3	2	-	-	1	3	-	3
WA	**2.6**	**2.7**	**1.6**	**2**	**2.3**	**2.6**	**2**	**2.7**	**1**	**3**	**1**	**3**

Annexure: English Language Syllabus

Syllabus For Ability Enhancement Compulsory Course (AECC)
ENGLISH LANGUAGE (L2)

For Undergraduate Programs offered in

Faculty of Commerce and Management

B.Com, BBA, BBA (H & H), BBA (Aviation and International Tourism)

Title of the Paper – Poetry, Prose and Language Component-II

Semester II **Course Code:** **B.Com. / BBA (All) 21ENG220**	**Course Title:** **Poetry, Prose and Language Component-II**
Course Credits: 03 (2:1:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1: Obtain knowledge of literary genres and devices

CO2: Familiarity with representative literary texts with attention to historical, geographical, cultural contexts. Inquire into the socio-political background and determine its impact on the society.

CO3: Develop the skill to interpret, analyze, criticize and to express creatively for a variety of purposes and audience.

CO4: Gain an insight into the aesthetic values of literature and relate the didactic purpose of literature to lead a successful life.

CO5: Heightened awareness of correct usage of English grammar in written and oral Communication.

Course Content

POETRY **20 hrs**

1. Death, Be Not Proud – John Donne
2. My Last Duchess- Robert Browning
3. Ozymandias – P. B. Shelley
4. Unknown Citizen- W. H. Auden
5. I, Too – Langston Hughes
6. Mirror- Sylvia Plath
7. Mending Wall – Robert Frost
8. Ulysses by the Merlion – Edwin Thamboo

PROSE **16 hrs**

1. Self-Portrait (Rashtrapati) – Jawaharlal Nehru
2. The Night Train at Deoli – Ruskin Bond
3. On the Rule of the Road- A. G. Gardiner
4. After Twenty Years – O. Henry

LANGUAGE COMPONENT AND LITERARY ACTIVITY **20 hrs**

1. Adjectives
2. Adverbs
3. Linkers (Conjunctions)
4. Words Often Confused

TEXT BOOK

RESPELENDENCE – II for II Semester Bachelor's Degree, University of Mysore, Mysuru

References:

- https://orelt.col.org/module/unit/4-grammar-improving-composition-skills
- https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers
- Jain Charul, Pradyumnasinh Raj & Yunus Karbharj. English Skills for Academic Purposes, Macmillan Education. London, 2017
- Murphy, Raymond, Grammar in Use, CUP, 2019, 5th Edition
- Swan Michael, Basic English Usage, OUP
- Thomson A J, A V Martinet, A Practical English Grammar, Oxford University Press

Course Articulation Matrix

B.Com. / BBA (All) 21ENG220

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	3	-	1	-	-	2	1	3	-	3	1	3
CO 2	3	3	2	3	1	3	3	3	1	3	1	3
CO 3	2	3	1	1	3	3	2	2	1	3	1	3
CO 4	2	2	2	-	-	3	2	3	1	3	-	3
CO 5	3	3	2	-	3	2	-	-	1	3	-	3
WA	**2.6**	**2.7**	**1.6**	**2**	**2.3**	**2.6**	**2**	**2.7**	**1**	**3**	**1**	**3**

Formative Assessment for II Semester Common to all Programs	
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	20
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	**40**

Formative Assessment = 40 Marks
Term End Examination = 60 Marks
Total = 100 Marks

Question Paper Pattern for Semester End Examination Common to all Programs

Language English – II

Title of the Paper: Poetry, Prose and Language Component-II

Time: 2½ hours Max. Marks: 60

I Answer <u>EIGHT</u> of the following Questions in a Word, a Phrase or a sentence each: 8x1=8

a)
b)
c)
d)
e)
f)
g)
h)
i)
j)
k)
l)

II Annotate THREE of the following: 3x4=12

a)
c)
d)
e)
f)

III Answer <u>TWO</u> of the following: 2x5=10

a)
b)
c)
d)

IV Answer <u>TWO</u> of the following: 2x5=10

a)
b)
c)
d)

V	**Language Component:**	**2x5=10**
a)	**Identify the adjectives in the following sentences:**	**5x1=5**
i)		
ii)		
iii)		
iv)		
v)		
b)	**Identify the adverbs in the following sentences:**	**5x1=5**
i)		
ii)		
iii)		
iv)		
v)		
c)	**Rewrite the following sentences uses suitable linkers given in the brackets:**	**5x1=5**
i)		
ii)		
iii)		
iv)		
v)		
d)	**Choose the correct word given in the brackets:**	**5x1=5**
i)		
ii)		
iii)		
iv)		
v)		

**** *** ****

Annexure: English Open Elective Syllabus - II
For all Undergraduate Programs

Title of the Paper-Spoken English for Corporate Jobs

Semester II **Course Code: 21OEENG201**	**Course Title: Spoken English for Corporate Jobs**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1: Skills for Enhanced Job opportunities

CO2: Enriched vocabulary and Knowledge of Business English

CO3: Effective communication for various social situations

CO4: Ability to thrive in a multi-cultural society

Course Content

Section I: English for Front Desk Management

1. Greeting, Welcoming
2. Dealing with Complaints, Giving Instructions or Directions
3. Giving Information: About Various Facilities, Distance, Area, Local Specialties
4. Consultation and Solution of Problems
5. Accepting Praises and Criticism, Apologizing

Section II: Fluency and Etiquettes

1. Polite sentences and Words
2. Use of persuading words
3. Intonation and Voice Modulation
4. Developing Vocabulary

Section III: Business Speeches

1. Principles of Effective Speech and Presentations
2. Speeches: Introduction, Vote of Thanks, Occasional Speech, Theme Speech
3. Use of Audio -Visual Aids in Presentations

Section IV: Cross-Cultural Communication

1. Dealing with Language Differences
2. Probing Questions to get Information
3. Etiquettes in Cross-cultural Communication

References:

- JV Vilanilam, More effective communication, Sage Publication Pvt. Ltd.
- Krishna Mohan and Banarji, Developing Communication Skills.
- Lesikar & Pettit, Business Communication, AITBS, Publishers Delhi
- Ludlow & Panton PHI, The Essence of Effective Communication, New Delhi.
- N Krishnaswamy, Lalitha Krishnaswamy and others, Mastering Communication Skills and Soft Skills - Bloomsbury, New Delhi, 2015
- Pradhan Bhende & Thankur, Business Communication Himalaya Publishing House, Mumbai.
- Rai & Raj - Effective Documentation & Presentation, Himalaya Publishing House – Mumbai
- Ray Rubeen, Communication Today - Himalaya Publishing House, Mumbai.
- R S N Pillai & Bhagawati, S Chand & Co.- Commercial Correspondence & Office Management
- Sushil Bahl , Business Communication Today, Response Books, Sage Publication, New Delhi.

Course Articulation Matrix
21OEENG201

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	3	2	1	1	3	1	1	1	2	3	1	3
CO 2	3	2	1	1	2	3	1	2	2	3	1	3
CO 3	3	1	1	2	1	2	1	2	2	3	1	3
WA	3	1.5	1	1.5	1.75	2.25	1	2	2	3	1	3

Formative Assessment for II Semester Common to all Programs	
Assessment Occasion/type	**Weightage in Marks**
First Internal Test	20
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	**40**

FormativeAssessment = 40 Marks

Term End Examination = 60 Marks

Total = 100 Marks

Question Paper Pattern for Semester End Examination Common to all programs

English Open Elective-II

Title of the Paper- Spoken English for Corporate Jobs

Time: 2½ hours Max. Marks: 60

I Answer TEN of the following questions in about 2-3 sentences : 10x2=20
(12 questions given should cover all the sections)

a)
b)
c)
d)
e)
f)
g)
h)
i)
j)
l)
m)
n)
o)

II Write short notes on Four of the following: 4x5=20
(6 Questions to be given covering all sections)

a)
b)
c)
d)
e)
f)

III Answer Two of the following: 1x10=10
(Three concepts to be given from any three sections)

a)
b)
c)

****

English Syllabus 2021-22

Board of Studies

Sl. No.	Name and address	Designation	Signature
01	Manjunath K R HoD – Department of English SBRR Mahajana First Grade College Mysuru manjunathkr.fgc@mahajana.edu.in	Chairman	K.R. Manjunath 20-12-2021.
02	Dr. Vanamala S M Associate Professor Mandya P G Centre Mob. 9449789748 Vanamalasm861@gmail.com	Member	S.M.Vanamala
03	Dr. Nataraj G Assistant Professor DoS in English, KSOU, Mysuru Mob. 9741219820 nataraj.g.ukkalagere@gmail.com	Member	
04	Dr. B.N. Shreekeerthy Assistant Professor DoS in English Jnanabharathi, University of Bangalore, Bengaluru Mob. 9739012854 drskeerthy@gmail.com	Member	
05	Smt. Geetha D Assistant Professor Department of English SBRR Mahajana First Grade College, Mysuru Mob. 9945653221 geethalit@rediffmail.com	Member	Dgeetha
06	Ms. Spoorthi C S Assistant Professor St. Joseph's College, Hunsuru Mob. 8867091969 csspoorthi@gmail.com	Member	Absent.

K R Manjunath
Chairperson
BOS/BOE in English
SBRR Mahajana First Grade College

Mahajana Education Society (R.)

Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012

Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade

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BOARD OF STUDIES (BoS)

DEPARTMENT OF ENGLISH

UG ☑

PG ☐

NEP Syllabi for III and IV Semester

English Language – 2 (AECC)

2022-23

DEPARTMENT OF ENGLISH

Motto

Write better, speak better

Vision

To mould the students to confront the global challenge

Mission

To inculcate values to become better
human beings through literature

Program Outcome (PO) Attributes

PO1	Domain Knowledge
PO2	Problem Analysis
PO3	Design/Development of Solutions
PO4	Investigation and Research
PO5	Use of Modern Techniques/Tools
PO6	Impact on Society
PO7	Environment and Sustainability
PO8	Moral and Ethical Values
PO9	Individual and Team Work
PO10	Communication
PO11	Project Management and Finance
PO12	Lifelong Learning

General Objectives

- Comprehension of written and spoken English
- Knowledge of various elements of grammar to write better and speak better
- Effective use of English for various purposes: academic, business, professional and social media
- Develop interest in appreciation of literature and its significance to the society
- Understand human life better
- Ability to use English in real life situations

List of Board of Studies Members

Sl. No.	Category	Name Smt./Sri	Designation	Address for Communication	E-mail and Mobile No.
1	HoD & Chairman	Manjunath K R	Assistant Professor	SBRR Mahajana First Grade College, Mysore	manjunathkr.fgc@mahajana.edu.in 9448493596
2	Faculty Member	Geetha D	Assistant Professor	SBRR Mahajana First Grade College, Mysore	geethalit@rediffmail.com 9945653221
3	Two Experts from external university	1. Dr. Nataraj G	Assistant Professor	DoS in English, KSOU, Mysuru	Nataraj.g.ukkalagere@gmail.com 9741219820
		2. Dr. B.N. Shreekerthy	Assistant Professor	DoS in English, Jnanabharathi, University of Bangalore, Bengaluru	drskeerthy@gmail.com 9739012854
4	Nominee by the Vice Chancellor	Dr. Vanamala S M	Associate Professor	Mandya P G Centre, Mandya	vanamalasm861@gmail.com 9449789748
5	Alumnus	Ms. Spoorthi C S	Assistant Professor	St. Joseph's College, Hunsuru	cssporrthi@gmail.com 8867091969

Course Structure (NEP 2020)

English Language (AECC)
Generic English (L2)
II Year for all Progams

III Semester

Course Type, Code and Title	L:T:P	Credits	Teaching Hours per Week	Total No. of Hours	Maximum Marks			Total Marks	Exam Duration
					IA		Exam		
					C1	C2	C3		
AECC- Generic English L2 Drama and Language Component **BA / BSc / BCA** – 22ENG319 **BCom / BBA (All) –** 22ENG320	2:1:0	3	04	56	20	20	60	100	2½
IV Semester									
AECC- Generic English L2 Fiction and Language Component **BA / BSc / BCA** – 22ENG419 **BCom / BBA (All) –** 22ENG420	2:1:0	3	04	56	20	20	60	100	2½

Annexure: English Language Syllabus

Syllabus For Ability Enhancement Compulsory Course (AECC)

ENGLISH LANGUAGE (L2)

For Undergraduate Programs offered in

Faculty of Arts and Science (BA, BSc, BCA)

Title of the Paper – Generic English, L2 - Drama and Language Component

Semester III **Course Code:** **BA / BSc / BCA - 22ENG319**	**Course Title: AECC, Generic English L2 Drama and Language Component**
Course Credits: 03 (2:1:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1: Ability to critically analyse, interpret and appreciate literary texts and gain an awareness of social, cultural, religious and ethnic diversities for an inclusive outlook to function effectively in a multi-cultural society.

CO2: Augmented presentation and analytical skills.

CO3: Prepare students for the technologically advanced world, its challenges and opportunities.

CO4: Acquire and apply language skills for competitive exams and employability skills for emerging sectors such as content writers, interpreters, translators and transcribers.

CO5: Enhanced competency for LSRW (Listening, Speaking, Reading, Writing skills)

Course Content

Unit-1			
Receptive Skills	Reading and Listening Skills		
Reading Skills	**Play**		
	Othello by Shakespeare	26 Hours	30 Marks
Listening Skills	**Persuasive Speeches**	5 Hours	10 Marks
1-Swami Vivekananda's speech at the World Parliament of Religions in Chicago, in which he introduced Hinduism to North America, which became historical.			
2- "Crisis of Civilization" speech by Rabindranath Tagore at Shanti Niketan in April 1941 was his last speech. Tagore had been unwell for some time, yet his words were very moving. https://www.youtube.com/wat			
3-"Quit India" speech delivered by Mahatma Gandhi on August 8, 1942, addressed the A.I.C.C. at Mumbai. https://youtu.be/QXajHuEKY			
4-Dr. B R Ambedkar's Constituent Assembly Speech on Dec 17,1946 https://www.youtube.com/wat			
5-Martin Luther King's 'I Have a Dream' Speech, 1963 https://www.youtube.com/wat			

Productive Skills: Speaking and Writing Skills			
Speaking Skills	**Presentation Skills**		
	Types - • Informative/Instructional Presentation • Persuasive Presentation • Decision Making Presentation • Demonstrative Presentation	5 Hours	5 Marks
Writing Skills	**Introduction to Writing and Types of Writing**		
	Introduction to Writing Types of Writing • Descriptive Writing • Narrative Writing • Reflective Writing • Persuasive/Argumentative Writing • Comparative Writing • Cause and Effect Writing	5 Hours	5 Marks
	Business Correspondence		
	Letters of Enquiry, Order Letters, Letters of Complaint, Reply to Letter of Complaint, Promotion Letters, Sales Letters	6 Hours	5 Marks
	Commercial Writing		
	• Advertisement Writing • Product Manual • Poster/Brochure Writing	5 Hours	5 Marks
Formative Assessment Activities	**Formative Assessment** First Internal Test Second Internal Test First Class Test/Oral Test/ Assignments/ Surveys/ Interviews Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	4 Hours	4 Hours

- **Text: Othello by William Shakespeare (Unit – 1)**

References for Unit - 2:

- Chaturvedi PD and Mukesh Chaturvedi, Business Communication, Concepts, Cases and Applications. Pearson, 2011
- Garg Manoj Kumar. English Communication – Theory and Practice – Ability Enhancement Compulsory Course. Cengage, 2019.
- Peck, John and Martin Coyle. Write It Right – Secrets of Effective Writing (Palgrave Study Skills), Palgrave Macmillan, 2005, 2012
- Seely, John, Oxford Guide to Effective Writing and Speaking. OUP, 2998, 2013
- Yadugiri, M A. Making Sense of English – A Textbook of Sounds, Words and Grammar, Viva Books, 2005, 2020

Course Articulation Matrix - BA / BSc / BCA - 22ENG319

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	1	2	3	1	3	2	3	1	3
CO2	3	2	1	1	1	1	1	3	2	3	1	3
CO3	1	1	2	-	3	3	1	2	2	3	1	3
CO4	3	3	2	1	2	3	-	1	3	3	1	3
CO5	3	3	1	1	1	2	1	1	1	3	-	3
WA	**2.6**	**2.4**	**1.6**	**1**	**1.8**	**2.4**	**1**	**2**	**2**	**3**	**1**	**3**

Annexure: English Language Syllabus

Syllabus For Ability Enhancement Compulsory Course (AECC)

ENGLISH LANGUAGE (L2)

For Undergraduate Programs offered in

Faculty of Commerce and Management

B.Com, BBA, BBA (H &H), BBA (Aviation & International Tourism)

Title of the Paper – Generic English – 2 Drama and Language Component

Semester III **Course Code:** **BCom / BBA (All) – 22ENG320**	**Course Title: AECC, Generic English - 2 Drama and Language Component**
Course Credits: 03 (2:1:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1: Ability to critically analyse, interpret and appreciate literary texts and gain an awareness of social, cultural, religious and ethnic diversities for an inclusive outlook to function effectively in a multi-cultural society.

CO2: Augmented presentation and analytical skills.

CO3: Prepare students for the technologically advanced world, its challenges and opportunities.

CO4: Acquire and apply language skills for competitive exams and employability skills for emerging sectors such as content writers, interpreters, translators and transcribers.

CO5: Enhanced competency for LSRW (Listening, Speaking, Reading, Writing skills)

Course Content

Unit-1			
Receptive Skills	Reading and Listening Skills		
Reading Skills	**Play**		
	Macbeth by Shakespeare	26 Hours	30 Marks
Listening Skills	**Persuasive Speeches**	5 Hours	10 Marks
1-Swami Vivekananda's speech at the World Parliament of Religions in Chicago, in which he introduced Hinduism to North America, which became historical.			
2- "Crisis of Civilization" speech by Rabindranath Tagore at Shanti Niketan in April 1941 was his last speech. Tagore had been unwell for some time, yet his words were very moving. https://www.youtube.com/wat			
3-"Quit India" speech delivered by Mahatma Gandhi on August 8, 1942, addressed the A.I.C.C. at Mumbai. https://youtu.be/QXajHuEKY			
4-Dr. B R Ambedkar's Constituent Assembly Speech on Dec 17,1946 https://www.youtube.com/wat			
5-Martin Luther King's 'I Have a Dream' Speech, 1963 https://www.youtube.com/wat			

Productive Skills: Speaking and Writing Skills			
Speaking Skills	**Presentation Skills**		
	Types - • Informative/Instructional Presentation • Persuasive Presentation • Decision Making Presentation • Demonstrative Presentation	5 Hours	5 Marks
Writing Skills	**Introduction to Writing and Types of Writing**		
	Introduction to Writing Types of Writing • Descriptive Writing • Narrative Writing • Reflective Writing • Persuasive/Argumentative Writing • Comparative Writing • Cause and Effect Writing	5 Hours	5 Marks
	Business Correspondence		
	Letters of Enquiry, Order Letters, Letters of Complaint, Reply to Letter of Complaint, Promotion Letters, Sales Letters	6 Hours	5 Marks
	Commercial Writing		
	• Advertisement Writing • Product Manual • Poster/Brochure Writing	5 Hours	5 Marks
Formative Assessment Activities	**Formative Assessment** First Internal Test Second Internal Test First Class Test/Oral Test/ Assignments/ Surveys/ Interviews Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	4 Hours	4 Hours

- **Text: Macbeth by William Shakespeare (Unit – 1)**

References for Unit - 2:

- Chaturvedi PD and Mukesh Chaturvedi, Business Communication, Concepts, Cases and Applications. Pearson, 2011
- Garg Manoj Kumar. English Communication – Theory and Practice – Ability Enhancement Compulsory Course. Cengage, 2019.
- Peck, John and Martin Coyle. Write It Right – Secrets of Effective Writing (Palgrave Study Skills), Palgrave Macmillan, 2005, 2012
- Seely, John, Oxford Guide to Effective Writing and Speaking. OUP, 2998, 2013
- Yadugiri, M A. Making Sense of English – A Textbook of Sounds, Words and Grammar, Viva Books, 2005, 2020

Course Articulation Matrix
BCom / BBA (All) – 22ENG320

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	1	2	3	1	3	2	3	1	3
CO2	3	2	1	1	1	1	1	3	2	3	1	3
CO3	1	1	2	-	3	3	1	2	2	3	1	3
CO4	3	3	2	1	2	3	-	1	3	3	1	3
CO5	3	3	1	1	1	2	1	1	1	3	-	3
WA	**2.6**	**2.4**	**1.6**	**1**	**1.8**	**2.4**	**1**	**2**	**2**	**3**	**1**	**3**

Assessment Pattern for III Semester Common to all Programs		
A	Formative Assessment	40 Marks
B	Summative Assessment	60 marks
	Total	**100 Marks**

Formative Assessment	40 Marks
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	20
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	40

Question Paper Pattern for Semester End Examination Common to all Programs

Language English – II (AECC)

Title of the Paper: Generic English – 2 Drama and Language Component

Time: 2½ hours Max. Marks: 60

UNIT - 1

I Answer FOUR of the following: 4x5=20

(Characters / Scenes from the Drama – 4 questions out of 6 to be answered)

1.
2.
3.
4.
5.
6.

II Answer ONE of the following: 1x10=10

(Characters / Scenes from Drama – 1 question out of 3 to be answered)

1.
2.
3.

III Answer TWO of the following: 2X5=10

(Persuasive Speeches – 2 questions out of 4 to be answered)

1.
2.
3.
4.

Unit – 2

IV Answer ONE of the following: (1X5=5)

(Presentation Skills – 1 question out of 3 to be answered)

1.
2.
3.

a) Answer ONE of the following: (1X5=5)

(Writing Skills – 1 question out of 3 to be answered – Introduction to Writing and Types of Writing)

1.
2.
3.

b) Answer ONE of the following: (1X5=5)

(Business Correspondence - 1 question out of 3 to be answered)

1.
2.
3.

c) Answer ONE of the following: (1X5=5)

(Commercial Writing- 1 question out of 3 to be answered)

1.
2.
3.

** *** **

Annexure: English Language Syllabus

Syllabus For Ability Enhancement Compulsory Course (AECC)
ENGLISH LANGUAGE (L2)

For Undergraduate Programs offered in

Faculty of Arts and Science (BA BSC BCA)

Title of the Paper – Generic English – 2 Fiction & Language Component

Semester IV **Course Code:** **BA / BSc./ BCA – 22ENG419**	**Course Title: AECC, Generic English - 2 Fiction & Language Component**
Course Credits: 03 (2:1:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1: Ability to critically analyse, interpret and appreciate literary texts and gain an awareness of social, cultural, religious and ethnic diversities for an inclusive outlook to function effectively in a multi-cultural society.

CO2: Augmented presentation and analytical skills.

CO3: Prepare students for the technologically advanced world, its challenges and opportunities.

CO4: Acquire and apply language skills for competitive exams and employability skills for emerging sectors such as content writers, interpreters, translators and transcribers.

CO5: Enhanced competency for LSRW (Listening, Speaking, Reading, Writing skills)

Course Content

Unit-1			
Receptive Skills: Reading and Listening Skills			
Reading Skills	**Novel**		
	***Talkative Man by* R K Narayan**	26 Hours	30 Marks
Listening Skills	**Listening and Decoding**		
Listen to and understand the following Poems: 1. Darkling Thrush- Thomas Hardy 2. Good-Bye Party for Pushpa T S -Nissim Ezekiel 3. Snake- D. H. Lawrence 4. The Learned Astronomer – Walt Whitman		5 Hours	10 Marks

Productive Skills: Speaking and Writing Skills			
Speaking Skills			
Speaking Skills	• Group Discussion • Public Speaking	6 Hours	5 Marks
Writing Skills	**Technical Skills**		
	Copy writing Business Writing Travel Writing Article Writing	8 Hours	5 Marks
E-correspondence and Content Writing Skills			
E-mail- **Casual and Professional**	Apology Letters, Appreciation Letters Congratulation Letters	5 Hours	5 Marks
Social Media Content Writing skills	• Blog writing • Podcast writing • Writing on Instagram	6 Hours	5 Marks

- **Text: Talkative Man by R K Narayan (Unit – 1)**

References for Unit - 2:

- Chaturvedi PD and Mukesh Chaturvedi, Business Communication, Concepts, Cases and Applications. Pearson, 2011
- Garg Manoj Kumar. English Communication – Theory and Practice – Ability Enhancement Compulsory Course. Cengage, 2019.
- Peck, John and Martin Coyle. Write It Right – Secrets of Effective Writing (Palgrave Study Skills), Palgrave Macmillan, 2005, 2012
- Seely, John, Oxford Guide to Effective Writing and Speaking. OUP, 2998, 2013
- Yadugiri, M A. Making Sense of English – A Textbook of Sounds, Words and Grammar, Viva Books, 2005, 2020

Course Articulation Matrix – BA / BSc./ BCA – 22ENG419

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	1	2	3	1	3	2	3	1	3
CO2	3	2	1	1	1	1	1	3	2	3	1	3
CO3	1	1	2	-	3	3	1	2	2	3	1	3
CO4	3	3	2	1	2	3	-	1	3	3	1	3
CO5	3	3	1	1	1	2	1	1	1	3	-	3
WA	**2.6**	**2.4**	**1.6**	**1**	**1.8**	**2.4**	**1**	**2**	**2**	**3**	**1**	**3**

Annexure: English Language Syllabus

Syllabus For Ability Enhancement Compulsory Course (AECC)
ENGLISH LANGUAGE (L2)

For Undergraduate Programs offered in

Faculty of Commerce and Management

B.Com, BBA, BBA (H &H), BBA (Aviation & International Tourism

Title of the Paper – Generic English – 2 Fiction and Language Component

Semester IV **Course Code:** **B.Com / BBA (All) – 22ENG420**	**Course Title: AECC, Generic English - 2 Fiction & Language Component**
Course Credits: 03 (2:1:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1: Ability to critically analyse, interpret and appreciate literary texts and gain an awareness of social, cultural, religious and ethnic diversities for an inclusive outlook to function effectively in a multi-cultural society.

CO2: Augmented presentation and analytical skills.

CO3: Prepare students for the technologically advanced world, its challenges and opportunities.

CO4: Acquire and apply language skills for competitive exams and employability skills for emerging sectors such as content writers, interpreters, translators and transcribers.

CO5: Enhanced competency for LSRW (Listening, Speaking, Reading, Writing skills)

Course Content

Unit-1			
Receptive Skills: Reading and Listening Skills			
Reading Skills	**Novel**		
	***The Man-Eater of Malgudi*- R K Narayan**	26 Hours	30 Marks
Listening Skills	**Listening and Decoding**		
Listen to and understand the following Poems: 5. Darkling Thrush- Thomas Hardy 6. Good-Bye Party for Pushpa T S -Nissim Ezekiel 7. Snake- D. H. Lawrence 8. The Learned Astronomer – Walt Whitman		5 Hours	10 Marks

Productive Skills: Speaking and Writing Skills			
Speaking Skills			
Speaking Skills	• Group Discussion • Public Speaking	6 Hours	5 Marks
Writing Skills	**Technical Skills**		
	Copy writing Business Writing Travel Writing Article Writing	8 Hours	5 Marks
E-correspondence and Content Writing Skills			
E-mail- **Casual and Professional**	Apology Letters, Appreciation Letters Congratulation Letters	5 Hours	5 Marks
Social Media Content Writing skills	• Blog writing • Podcast writing • Writing on Instagram	6 Hours	5 Marks

- **Text: The Man-Eater of Malgudi - R K Narayan (Unit – 1)**

References for Unit - 2:

- Chaturvedi PD and Mukesh Chaturvedi, Business Communication, Concepts, Cases and Applications. Pearson, 2011
- Garg Manoj Kumar. English Communication – Theory and Practice – Ability Enhancement Compulsory Course. Cengage, 2019.
- Peck, John and Martin Coyle. Write It Right – Secrets of Effective Writing (Palgrave Study Skills), Palgrave Macmillan, 2005, 2012
- Seely, John, Oxford Guide to Effective Writing and Speaking. OUP, 2998, 2013
- Yadugiri, M A. Making Sense of English – A Textbook of Sounds, Words and Grammar, Viva Books, 2005, 2020

Course Articulation Matrix – B.Com / BBA (All) – 22ENG420

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	1	2	3	1	3	2	3	1	3
CO2	3	2	1	1	1	1	1	3	2	3	1	3
CO3	1	1	2	-	3	3	1	2	2	3	1	3
CO4	3	3	2	1	2	3	-	1	3	3	1	3
CO5	3	3	1	1	1	2	1	1	1	3	-	3
WA	**2.6**	**2.4**	**1.6**	**1**	**1.8**	**2.4**	**1**	**2**	**2**	**3**	**1**	**3**

Assessment Pattern for IV Semester Common to all Programs		
A	Formative Assessment	40 Marks
B	Summative Assessment	60 marks
	Total	**100 Marks**

Formative Assessment	40 Marks
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	20
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	40

Question Paper Pattern for Semester End Examination, Common to all Programs

Language English – II

Title of the Paper: Generic English Fiction and Language Component

Time: 2½ hours Max. Marks: 60

UNIT - 1

I Answer FOUR of the following: 4x5=20

(Characters / Key Incidents from the Novel – 4 questions out of 6 to be answered)

1.
2.
3.
4.
5.
6.

II Answer ONE of the following: 1x10=10

(Characters / Incidents from the Novel - 1 question out 3 of to be answered)

1.
2.
3.

III Answer TWO of the following: 2X5=10

(Poetry – 2 questions out of 4 to be answered - Poetry)

1.
2.
3.
4.

Unit – 2

IV a) Answer ONE of the following: (1X5=5)

(Speaking Skills – 1 question out of 2 to be answered)

1.
2.

b) Answer ONE of the following: (1X5=5)

(Technical Skills – 1 question out of 4 to be answered)

1.
2.
3.
4.

Va) Answer ONE of the following: **(1X5=5)**

(E-mail – Casual and Professional – 1 question out of 3 to be answered)

1.

2.

3.

b) Answer ONE of the following: **(1X5=5)**

(Social Media Content Writing Skills – 1 question out of 3 to be answered)

1.

2.

3.

** *** **

English Syllabus 2022-23
Board of Studies

Sl. No.	Name and address	Designation	Signature
01	Manjunath K R HoD – Department of English SBRR Mahajana First Grade College Mysuru manjunathkr.fgc@mahajana.edu.in	Chairman	K.R. Manjunath.
02	Dr. Vanamala S M Associate Professor Mandya P G Centre Mob. 9449789748 vanamalasm861@gmail.com	Member	S.M. Vanamala 20/10/22
03	Dr. Nataraj G Assistant Professor DoS in English, KSOU, Mysuru Mob. 9741219820 nataraj.g.ukkalagere@gmail.com	Member	
04	Dr. B.N. Shreekeerthy Assistant Professor DoS in English Jnanabharathi, University of Bangalore, Bengaluru Mob. 9739012854 drskeerthy@gmail.com	Member	ON LINE
05	Smt. Geetha D Assistant Professor Department of English SBRR Mahajana First Grade College, Mysuru Mob. 9945653221 geethalit@rediffmail.com	Member	Dgeetha
06	Ms. Spoorthi C S Assistant Professor St. Joseph's College, Hunsuru Mob. 8867091969 csspoorthi@gmail.com	Member	Absent

Mahajana Education Society (R.)

Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012

Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade

College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF ENGLISH

UG ☑

PG ☐

NEP Syllabi for I and II Semester BA Optional English

2021-22

DEPARTMENT OF ENGLISH

Motto

Write better, speak better

Vision

To mould the students to confront the global challenge

Mission

To inculcate values to become better
human beings through literature

Program Outcomes (POs) for Bachelor of Arts

PO1 **Domain knowledge:** Acquire knowledge of management theories and practices with special focus on professional accounting and finance.

PO2 **Problem Analysis:** Identify, formulate and analyze complex business problems in a structured approach to focus upon real issues.

PO3 **Design/Development of Solutions:** Developing solutions by using critical thinking and analytical reasoning with appropriate qualitative, quantitative techniques and software applications in solving business and research problems.

PO4 **Investigation and Research:** Implementation of research methods to investigate specific business problems and draw conclusions.

PO5 **Use of Modern Techniques/Tools:** Ability to analyze and interpret data using mathematical, statistical, ICT and risk management techniques to solve business problems.

PO6 **Business and Society**: Entrepreneurs/Managers with socio-economic value system.

PO7 **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and channelize inclination towards sustainable development.

PO8 **Moral and Ethical Values:** Assimilate ethical, value based leadership skills and moral principles.

PO9 **Individual and Team Work:** Ability to perform as an individual or leader in diverse settings.

PO10 **Communication:** Harness communication and leadership skills effectively to adapt to the growing business world.

PO11 **Project Management and Finance:** Design methods and process; apply skills and knowledge to complete projects in accordance with project acceptance criteria and financial considerations.

PO12 **Lifelong Learning:** Evolve and improve as an individual by updating knowledge to enable oneself to thrive in social and professional life.

List of Board of Studies Members

Sl. No.	Category	Name Smt./Sri	Designation	Address for Communication	E-mail and Mobile No.
1	HoD & Chairman	Manjunath K R	Assistant Professor	SBRR Mahajana First Grade College, Mysore	manjunathkr.fgc@mahajana.edu.in 9448493596
2	Faculty Member	Geetha D	Assistant Professor	SBRR Mahajana First Grade College, Mysore	geethalit@rediffmail.com 9945653221
3	Two Experts from external university	1. Dr. Nataraj G	Assistant Professor	DoS in English, KSOU, Mysuru	Nataraj.g.ukkalagere@gmail.com 9741219820
		2. Dr. B.N. Shreekerthy	Assistant Professor	DoS in English, Jnanabharathi, University of Bangalore, Bengaluru	drskeerthy@gmail.com 9739012854
4	Nominee by the Vice Chancellor	Dr. Vanamala S M	Associate Professor	Mandya P G Centre, Mandya	vanamalasm861@gmail.com 9449789748
5	Alumnus	Ms. Spoorthi C S	Assistant Professor	St. Joseph's College, Hunsuru	cssporrthi@gmail.com 8867091969

Course Structure

DSC Optional English

I Year

Course Type, Course Code and Title	L : T : P	Credits	Teaching Hours per Week	Total No. of Hours	Maximum Marks			Total Marks	Exam Duration
					IA		Exam		
					C1	C2	C3		
I Semester									
211179 DSC(1) Introduction to Literature	3 : 0 : 0	3	03	42	20	20	60	100	2½
211180 DSC(2) Indian Writing in English Part - I	3 : 0 : 0	3	03	42	20	20	60	100	2½
II Semester									
211279 DSC(3) Introduction to Phonetics and Linguistics	3 : 0 : 0	3	03	42	20	20	60	100	2½
211280 DSC(4) Indian Writing in English Part - II	3 : 0 : 0	3	03	42	20	20	60	100	2½

General Objectives:

1. Explore texts and contexts of writings and readings from varied spaces in English Literature.
2. Connect liberal arts, humanities and social sciences through a multidimensional curriculum.
3. Develop the students' ability to read, process, think critically and independently.
4. Establish necessary skills of interpreting analyzing a text for a multidisciplinary approach towards higher studies and research.
5. Develop in students an inclusive outlook, inculcate ethical and moral values for a sense of social commitment.
6. Introduce multiple areas of writings in English language and translations in English.
7. Train students in skills for a relevant career in literary field – creative writing, translation and publishing.
8. To equip students with qualities of sympathy and empathy for lifelong learning.

Annexure: English Optional Syllabus

OPTIONAL ENGLISH

For Undergraduate Programs offered in

Syllabus for I Semester B A in English (Basic / Hons.)

Semester I **Course Code: 211179**	**Course Title: DSC(1) Introduction to Literature**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcome

CO1 Knowledge literary terms and literary devices.

CO2 Recognise structural elements of poetry, fiction and drama to analyze literary texts.

CO3 Identify techniques and creative uses of language in literary writings.

Unit –1: Introduction to Literature	14
Chapter No. 1 What is literature? -Defining Literature -Why Study Literature? **Chapter No. 2** Literature and Society-Literature and Life **Chapter No. 3** Literature and Science – canon - elements of literature	
Unit - 2 : II. **Literary Forms**	14
Poetry: Lyric, Sonnet, Ballad, Epic, Elegy, Mock-Epic **Drama:** Comedy, Tragedy, Tragic-comedy, One-act-play **Prose**: Novel, Novella, Short Story, Essay, Biography, autobiography	
Unit – 3: Literary Terms and **Figurative language**	14
• Couplet, Heroic Couplet, Allegory, Alliteration, Assonance, Refrain, aside, monologue, soliloquy, meta-fiction, plot, character, setting, narrative technique. • Farce, simile, metaphor, personification, hyperbole, satire, prologue, epilogue, Art for Art's sake, Expressionism, Metre and Metrical Devices, Narratology, Romanticism, Canon. • Simile, metaphor, personification, hyperbole, onomatopoeia, euphemism, irony, oxymoron, synecdoche, understatement paradox, allusion	

Text Books:

1. Glossary Literary Terms by M H Abrams

2. Hudson, William Henry; An Introduction to the Study of Literature New Delhi *Atlantic 2007.*

References

- Baldick, Chris. The Oxford Dictionary of Literary Terms. OUP, 2001.
- Bate, Jonathan. English Literature: A Very Short Introduction. OUP.
- Benett, Andrew. An Introduction to Literature, Criticism and Theory. Routledge.
- Eagleton, Terry. How to Read Literature. Yale University Press.
- Eaglestone, Robert. Doing English; A Guide for Literature Students. Routledge, 2000. Gopal,
- Priyamvada. The Indian English Novel; Nation History, and Narration.
- Mehrotra, Arvind, Ed; An Illustrated History of Indian Literature in English. Orient Blackswan, 2005
- Ousby, laih. Ed; The Cambridge Guide to Literature in English, Cambridge University Press. 1983
- The McGraw-Hill. Introduction to Literature
- https: //blog.reedry.com.literary.devices
- https: //oer.precsbooks.pub

Course Articulation Matrix - 211179

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	-	-	1	1	-	1	2	3	-	3
CO2	3	1	1	-	1	1	-	1	1	3	-	3
CO3	2	1	-	1	1	1	-1	3	1	3	2	3
WA	**2.6**	**1**	**1**	**1**	**1**	**1**	**1**	**1.6**	**1.3**	**3**	**2**	**3**

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	10
Second Internal Test	10
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	40

Formative Assessment = 40 Marks

Term End Examination = 60 Marks

Total = 100 Marks

Question Paper Pattern

I Semester BA Optional English

(For students admitted to the First Semester in 2021-22)

Title: DSC(1) Introduction to Literature

Time: 2½ hours Marks : 60

I. Answer TWO of the following in not more than a page and a half each: (2x10=20)

a.
b.
c.
d.

II **Answer FIVE of the following in not more than a page without omitting any form – Poetry, Drama, Prose: (5x4=20)**

a.	b.	c.
d.	e.	f.
g.	h.	i.

III. Answer any TEN of the following in a sentence each: (10x1=10)

a.
b.
c.
d.
e.
f.
g.
h.
i.
j.

IV. Answer any TWO of the following in a page each: (2x5=10)

a.
b.
c.
d.

** *** **

Semester I **Course Code: 211180**	**Course Title: DSC(2) Indian Writing in English Part-I**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcome

CO1 Associate the historical trajectories of various genres of Indian Writing in English.

CO2 Implement the concepts of learning about Indian writers, their ethos and tradition of writing and discourse.

CO3 Appreciate the Indian Writing in English from various historical and social perspective.

Unit –1 History of Indian English Literature (Pre Independence Period)	14
• The Nature and Scope of Indian English Literature; charges against Indian English Literature (Reference: M. K.Naik, A History of Indian English Literature (Chapters 1 and 6), New Delhi: Sahitya Akademi, 1980 • Pre-Independence Indian English Poetry, Prose, Drama and Novel • Introducing authors/texts from the pre-independence era - Raja Ram Mohan Roy, Toru Dutt, Aurobindo, Swami Vivekananda, Bankim Chandra Chattopadhyay, Mahatma Gandhi, Dr B R Ambedkar, Rabindranath Tagore, Sarojini Naidu Henry Derozio, Dean Mahomet	
Unit – 2 Pre independence fiction	14
• Selections from Mulk Raj Anand – Untouchable Raja Rao's Kanthapura, R K Narayan and Krupabai Satthianadhan	
Unit – 3 Indian English Poetry, Short Stories and Essays	14
Select Poems 1. Toru Dutt, Our Casuarina Tree 2. Sarojini Naidu, Coromandel Fishers 3. Henry Derozio – To India – My Native Land **Select Stories** 1. Mulk Raj Anand, - Barber's Trade Union 2. Rabindranath Tagore - My Lord the Baby 3. R. K. Narayan, - A Horse and Two Goats **Select Essays** 1. M. K. Gandhi -The Great Sentinel 2. Swami Vivekanand - 'Chicago Address' 3. B. R. Ambedkar - A Childhood Journey to Koregaon	

Text Books

1. Naik, M. K. A History of Indian English Literature. Delhi: Sahitya Akademi, 1992.
2. Iyenger,K R S. Indian Writing in English. New Delhi. Sterling Publisher, 1984.

References

- Deshmane, Chetan, ed. Muses India: Essays on English-Language Writers from Mahomet to Rushdie. Jefferson, NC, and London: McFarland & Co., 2013.
- Iyenger,K R S. Indian Writing in English. New Delhi. Sterling Publisher, 1984.
- Makarand Paranjape (Ed) Indian Poetry in English, Madras: Macmillan, 1993
- Naik, M. K. A History of Indian English Literature. Delhi: Sahitya Akademi, 1992.
- (M. K. Naik (Ed) The Indian English Short Story: A Representative Anthology, New Delhi: Arnold-Heinemann, 1984)
- Mukherjee, Meenakshi . The Twice Born Fiction. New Delhi: Heinemann, 1971. Narasimhiah C D ed Makers of Indian English Literature, Delhi Pencraft International 2000
- Radhakrishnan, N. Indo Anglian Fiction: Major Trends and Themes. Madras: Emerald.1984
- Rao, Krishna. The Indo-Anglian Novels and the Changing Tradition. Mysore: Rao and Raghavan, 1973.
- https://www.academica.edu
- htpp://ignited.in

Course Articulation Matrix - 211180

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	1	3	1	3	1	3	1	3
CO2	3	3	1	3	1	3	1	3	1	3	2	3
CO3	3	2	2	2	1	3	1	3	1	3	1	3
WA	**3**	**2.3**	**1.3**	**2**	**1**	**3**	**1**	**3**	**1**	**3**	**1.3**	**3**

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	10
Second Internal Test	10
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	40

Formative Assessment = 40 Marks

Term End Examination = 60 Marks

Total = 100 Marks

Question Paper Pattern
I Semester BA Optional English
(For students admitted to the First Semester in 2021-22)
Title: Paper – DSC(2) Indian Writing in English (Part-I)

Time: 2½ hours Marks : 60

I. A. Answer THREE questions in a page each: (3x5=15)

1.
2.
3.
4. Write Short Notes on the following writers:
   i)
   ii)

B. Answer FIVE questions in a Sentence each: (5x1=5)

1.
2.
3.
4.
5.
6.
7.
8.

II. A Answer THREE questions in a page each without omitting any novel: (3x5=15)

1.
2.
3.
4.
5.
6.

B. Answer FIVE questions in a Sentence each: (5x1=5)

1.
2.
3.
4.
5.
6.
7.
8.
9.

III. Answer FOUR questions in a page each without omitting Poetry, Short Stories or Essays: (4x5=20)

1.
2.
3.
4.
5.
6.
7.
8.
9.

** *** **

Annexure: English Optional Syllabus

OPTIONAL ENGLISH (L2)

For Undergraduate Programmes offered in

Syllabus for II Semester BA in English (Basic / Hons.)

Semester II **Course Code: 211279**	**Course Title: DSC(3)** **Introduction to Phonetics and Linguistics**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs)

CO1 Identify and acquire the basic concepts of language, linguistics and phonetics

CO2 Comprehend the use of various structures and parts of a language while communicating.

CO3 Develop fluency to speak and write with clarity and creativity through the acquired linguistic skills.

Unit –1 Introduction to Phonetics and Linguistics	14
Chapter No. 1 Language- its nature, definitions, characteristic features **Chapter No. 2** Linguistics – Definitions, Scope **Chapter No. 3** Branches of Linguistics	
Unit - 2 Phonetics and Phonology:	14
Chapter No. 4. Speech Mechanism, Organs of Speech, **Chapter No.5.** Production of Speech Sounds, Classification of Speech Sounds- vowels and consonants, **Chapter No. 6.** Transcription of words, Word stress, Phonemics-phone, allophone- phoneme	
Unit – 3 Morphology, Syntax and Semantics and Lexicon	14
Chapter No. 7 Morphology - Morph-word classes: lexical categories, functional categories, the morphological properties of English verbs and building words. Allomorph – morpheme **Chapter No. 8.** Syntax - Types of Sentences – basic terminology; categories & functions, functions of clauses **Chapter No. 9.** Semantics and Lexicon – word meaning: entailment and hyponymy, meaning opposites, semantic features, dictionaries & prototypes	

Text Books

1. Cruse, Alan. Meaning in Language. (Oxford: Oxford University Press, 2000).
2. Fromkin, V. (ed.) 2000. Linguistics: An Introduction to Linguistics. Cambridge: Blackwell.
3. Rocca, I., and W. Johnson. A Course in Phonology. (Oxford: Blackwell, 1994).

References:

- Aronoff, M., and Kirsten Fudeman. What is Morphology. (Oxford: Blackwell,2010).
- Booij, G E. The Grammr of Words: An Introduction to Linguistic Morphology. (Oxford: OUP, 2007). Catford, J. C. A Practical Introduction to Phonetics. (Oxford: Oxford University Press, 1988).
- Culicover, P. W. Principles and Parameters: An Introduction to Syntactic Theory. (Oxford: Oxford University Cruse, Alan. Meaning in Language. (Oxford: Oxford University Press, 2000).
- Fromkin, V. (ed.) 2000. Linguistics: An Introduction to Linguistics. Cambridge: Blackwell. Kenstowicz, M. 1994. Phonology in Generative Grammar. Cambridge: Blackwell.
- Goldsmith, J. (ed). Phonological Theory: The Essential Readings. (Cambridge: Blackwell, 1999). Radford, A. et al. 1999. Linguistics: An Introduction. Cambridge: Cambridge University Press. Radford, A. Transformational Grammar. (Cambridge: Cambridge University Press, 1988).
- Rocca, I., and W. Johnson. A Course in Phonology. (Oxford: Blackwell, 1994). Saeed, John I. Semantics (2nd ed). (Oxford: Basil Blackwel, 2003).
- http://ielanguages.com
- https:// all-about-linguistics group.shef.ac.uk
- https://www.expert.ai.

Course Articulation Matrix - 211279

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	-	1	1	1	1	3	-	3
CO2	3	1	1	2	1	2	1	1	2	3	1	3
CO3	3	1	1	2	3	3	1	1	3	3	1	3
WA	**3**	**1**	**1**	**1.6**	**2**	**2**	**1**	**1**	**2**	**3**	**1**	**3**

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	10
Second Internal Test	10
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	40

Formative Assessment = 40 Makrs
Term End Examination = 60 Marks
Total = 100 Marks

Question Paper Pattern

II Semester BA Optional English

(For students admitted to the First Semester in 2021-22)

Title: DSC(3) Introduction to Phonetics and Linguistics

Time: 2½ hours Marks : 60

UNIT - I

I. Answer FIVE questions in a word or a sentence each: (5x1=5)

a.
b.
c.
d.
e.
f.
g.
h.

II Answer THREE questions is not more than a page each: (3x5=15)

a.
b.
c.
d.
e.

UNIT - II

III. Answer FIVE questions in a word or a sentence each: (5x1=5)

a.
b.
c.
d.
e.
f.
g.
h.

IV Answer THREE questions is not more than a page each: (3x5=15)

a.
b. Transcribe the following words
i) ii) iii) iv) v)
c.
d.
e.

UNIT - III

V. Answer FIVE questions in a word or a sentence each: (5x1=5)

a.
b.
c.
d.
e.
f.
g.
h.

VI. Answer THREE questions is not more than a page each: (3x5=15)

a.
b.
c.
d.
e.

** *** **

Semester II **Course Code: 211280**	**Course Title: DSC(4) Indian Writing in English – Part – II**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs)

CO1 Knowledge of the growth and evolution of Indian writing in English.

CO2 Awareness Major and Minor writers and their works.

CO3 Understand the historical background ad socio-cultural ethos to respect cultural diversity.

Unit –1 History of Indian English Literature	14
• Post-Independence (1947-1980) Indian English Poetry, Prose, • Post-Independence (1947-1980) Indian English drama and Novel • Post-1980s Indian English literature	
Unit – 2 Introducing writers of the post independence era:	14
• Kamala Das, Shashi Deshpande, Chaman Nahal, Manohar Malgoankar, Amitav Ghosh, K. A. Abbas, Vikram Seth, Arundathi Roy, Arun Joshi, G B Desani, T P Kailasam, Girish Karnad, • Anita Desai, Manju Kapur, Arvind Adiga, Chitra Banerjee Divakaruni, Namitha Gokhale. • Kiran Desai, Anita Nair, Mahesh Dattani, Salman Rushdie, Ruskin Bond, Jeet Thayil, Sunithi Namjoshi, Arun Kolatkar etc	
Unit - 3 Illustrative Texts	14
Poetry 1. Syed Amanuddin - Don't Call Me Indo-Anglian 2. Kamala Das- An Introduction 3. A. K. Ramanujan, Small Scale Reflections on a Great House 4. Nissim Ezekiel's Good bye Party to Miss Pushpa T S **Novel** - Kushwant Singh's Train To Pakistan **A Short Play:** Mahesh Dattani's Seven Steps Around the Fire (Stage Play)	

Text Books

1. Naik, M. K. A History of Indian English Literature. Delhi: Sahitya Akademi, 1992.
2. Iyenger,K R S. Indian Writing in English. New Delhi. Sterling Publisher, 1984.
3. Kushwant Singh's Train To Pakistan
4. A short Play: Mahesh Dattani's Seven Steps Around the Fire (Stage Play)

References

- Ansani, Shyam M. New Dimensions of Indian English Novels, Delhi: Doaba House,1987
- Devy, G. N. After Amnesia: Tradition and Changes in Indian Literary Criticism Hyderabad: Orient Longman and Sangam Books, 1992.
- Devy, G.N. An Another Tongue: Essays on Indian English Literature, Madras: Macmillan India Ltd. 1995.
- Gandhi, Leela. Post-Colonialism, New : Oxford University Press, 2002.
- Jain, Jasbir. Beyond Postcolonialism: Dreams and Realities of a Nation, Jaipur: Rawat Publications, 2006.
- Makarand Paranjape (Ed) Indian Poetry in English, Madras: Macmillan, 1993
- (M. K. Naik (Ed) The Indian English Short Story: A Representative Anthology, New Delhi: Arnold-Heinemann, 1984)

Mukherji, Meenakshi . The Twice Born Fiction. New Delhi: Heinemann, 1971. Vishwanathan, G. Masks of Conquest: Literary Study and British Role in India. New

Course Articulation Matrix - 211280

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	-	-	1	1	1	-	2	1	3	-	3
CO2	3	1	-	-	1	1	1	2	1	3	1	3
CO3	3	1	2	2	1	3	1	3	1	3	1	3
WA	**3**	**1**	**2**	**1**	**1**	**1.6**	**1**	**2.3**	**1**	**3**	**1**	**3**

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	10
Second Internal Test	10
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	40

Formative Assessment = 40 Makrs

Term End Examination = 60 Marks

Total = 100 Marks

Question Paper Pattern

II Semester BA Optional English

(For students admitted to the First Semester in 2021-22)

Title: DSC(4) Indian Writing in English (Part – II)

Time: 2½ hours Marks : 60

UNIT - I

I. Answer FIVE questions in a word or a sentence each: (5x1=5)

a.
b.
c.
d.
e.
f.
g.
h.

II. Answer THREE questions is not more than a page each: (3x5=15)

a.
b.
c.
d.
e.

UNIT - II

I. Answer FIVE questions in a word or a sentence each: (5x1=5)

a.
b.
c.
d.
e.
f.
g.
h.

II. Answer THREE questions is not more than a page each: (3x5=15)

a.
b.
c.
d.

UNIT - III

I. Answer TWO questions in not more than a page each: (2x5=10)

a.
b.
c.
d.

II. Answer ONE question in not more than a page each: (1x5=5)

a.
b.

III. Answer ONE question in not more than a page each: (1x5=5)

a.
b.

** *** **

English Syllabus 2021-22

Board of Studies

Sl. No.	Name and address	Designation	Signature
01	Manjunath K R HoD – Department of English SBRR Mahajana First Grade College Mysuru manjunathkr.fgc@mahajana.edu.in	Chairman	K.R. Manjunath 20-12-2021
02	Dr. Vanamala S M Associate Professor Mandya P G Centre Mob. 9449789748 Vanamalasm861@gmail.com	Member	S.M. Vanamala
03	Dr. Nataraj G Assistant Professor DoS in English, KSOU, Mysuru Mob. 9741219820 nataraj.g.ukkalagere@gmail.com	Member	
04	Dr. B.N. Shreekeerthy Assistant Professor DoS in English Jnanabharathi, University of Bangalore, Bengaluru Mob. 9739012854 drskeerthy@gmail.com	Member	
05	Smt. Geetha D Assistant Professor Department of English SBRR Mahajana First Grade College, Mysuru Mob. 9945653221 geethalit@rediffmail.com	Member	Dgeetha
06	Ms. Spoorthi C S Assistant Professor St. Joseph's College, Hunsuru Mob. 8867091969 csspoorthi@gmail.com	Member	Absent.

K R Manjunath
Chairperson
BOS/BOE in English
Mahajana First Grade College

DEPARTMENT OF ENGLISH

Motto

Write better, speak better

Vision

To mould the students to confront the global challenge

Mission

To inculcate values to become better
human beings through literature

Programme Outcomes (POs) for Bachelor of Arts

PO1 **Domain knowledge:** Acquire knowledge of management theories and practices with special focus on professional accounting and finance.

PO2 **Problem Analysis:** Identify, formulate and analyze complex business problems in a structured approach to focus upon real issues.

PO3 **Design/Development of Solutions:** Developing solutions by using critical thinking and analytical reasoning with appropriate qualitative, quantitative techniques and software applications in solving business and research problems.

PO4 **Investigation and Research:** Implementation of research methods to investigate specific business problems and draw conclusions.

PO5 **Use of Modern Techniques/Tools:** Ability to analyze and interpret data using mathematical, statistical, ICT and risk management techniques to solve business problems.

PO6 **Business and Society**: Entrepreneurs/Managers with socio-economic value system.

PO7 **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and channelize inclination towards sustainable development.

PO8 **Moral and Ethical Values:** Assimilate ethical, value based leadership skills and moral principles.

PO9 **Individual and Team Work:** Ability to perform as an individual or leader in diverse settings.

PO10 **Communication:** Harness communication and leadership skills effectively to adapt to the growing business world.

PO11 **Project Management and Finance:** Design methods and process; apply skills and knowledge to complete projects in accordance with project acceptance criteria and financial considerations.

PO12 **Lifelong Learning:** Evolve and improve as an individual by updating knowledge to enable oneself to thrive in social and professional life.

List of Board of Studies Members

Sl. No.	Category	Name Smt./Sri	Designation	Address for Communication	E-mail and Mobile No.
1	HoD & Chairman	Manjunath K R	Assistant Professor	SBRR Mahajana First Grade College, Mysore	manjunathkr.fgc@mahajana.edu.in 9448493596
2	Faculty Member	Geetha D	Assistant Professor	SBRR Mahajana First Grade College, Mysore	geethalit@rediffmail.com 9945653221
3	Two Experts from external university	1. Dr. Nataraj G	Assistant Professor	DoS in English, KSOU, Mysuru	Nataraj.g.ukkalagere@gmail.com 9741219820
		2. Dr. B.N. Shreekerthy	Assistant Professor	DoS in English, Jnanabharathi, University of Bangalore, Bengaluru	drskeerthy@gmail.com 9739012854
4	Nominee by the Vice Chancellor	Dr. Vanamala S M	Associate Professor	Mandya P G Centre, Mandya	vanamalasm861@gmail.com 9449789748
5	Alumnus	Ms. Spoorthi C S	Assistant Professor	St. Joseph's College, Hunsuru	cssporrthi@gmail.com 8867091969

Course Structure (NEP)

DSC Optional English

II Year

Course Type, Course Code and Title	L : T : P	Credits	Teaching Hours per Week	Total No. of Hours	Maximum Marks			Total Marks	Exam Duration
					IA		Exam		
					C1	C2	C3		
III Semester									
211379 **DSC(5)** British Literature up to 1800 From Chaucer to the Age of Transition – (Part-1)	3 : 0 : 0	3	03	45	20	20	60	100	2½
211380 **DSC(6)** Indian Literature in Translation	3 : 0 : 0	3	03	45	20	20	60	100	2½
IV Semester									
211479 **DSC(7)** British Literature 19th and 20th Century (Part 2)	3 : 0 : 0	3	03	45	20	20	60	100	2½
211480 **DSC(8)** Gender Studies (PART 1)	3 : 0 : 0	3	03	45	20	20	60	100	2½

Objectives:

1. Explore texts and contexts of writings and readings from varied spaces in English Literature.
2. Connect liberal arts, humanities and social sciences through a multidimensional curriculum.
3. Develop the students' ability to read, process, think critically and independently.
4. Establish necessary skills of interpreting analyzing a text for a multidisciplinary approach towards higher studies and research.
5. Develop in students an inclusive outlook, inculcate ethical and moral values for a sense of social commitment.
6. Introduce multiple areas of writings in English language and translations in English.
7. Train students in skills for a relevant career in literary field – creative writing, translation and publishing.
8. To equip students with qualities of sympathy and empathy for lifelong learning.

Annexure: English Optional Syllabus

OPTIONAL ENGLISH

For Undergraduate Programs offered in

Syllabus for III Semester B A in English (Basic / Hons.)

Title of the Paper – DSC(5) BRITISH LITERATURE UP TO 1800

FROM CHAUCER TO THE AGE OF TRANSITION

Semester III **Course Code: 221379**	**Title: DSC(5) British Literature up to 1800 From Chaucer to the age of Transition**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03
Total Contact Hours: 42 Hours + 3 Hours (Activity)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcome

CO1 Identify the canonical literature of England.

CO2 Gain knowledge of important trends and movements in British literature.

CO3 Distinguish the poets, playwrights and novelists of different periods and relate them to real life situation.

UNIT I	
The Social Context of Medieval English Literature, Renaissance, Elizabethan Poetry, Elizabethan Drama, Metaphysical Poetry, Restoration Drama, 18th Century Prose, Development of Novel in	14 Hours
UNIT II	
Geoffrey Chaucer, Francis Bacon, Ben Jonson, John Milton, John Dryden, Alexander Pope, Dr. Samuel Johnson, William Shakespeare, Oliver Goldsmith, John Bunyan, Aphra Behn, Margaret Cavendish, Elizabeth Cary, Anne Finch, Amelia Lanyer, Fanny Burney, Elizabeth Carter etc. *King Lear*, *As You Like It*, *Volpone*, *Paradise Lost*, *Absalom and Achitophel*, *Rape of the Lock*, *Pamela*, *Letters of Elizabeth Carter*	14 Hours

UNIT III REPRESENTATIVE TEXTS	14 hours
Sonnet • Sonnet 18 Shall I Compare Thee to a Summer's Day - William Shakespeare • On His Blindness - John Milton **Lyric** • Lover's Infiniteness - John Donne • A Poison Tree - William Blake **Essay** • Of Love - Francis Bacon • Man in Black – Oliver Goldsmith **Play** • Doctor Faustus – Christopher Marlowe	

Books recommended and Suggested Reading

1. Andrew Sanders, English Literature, OUP, 2005
2. Edward Albert, History of English Literature, OUP, 2014
   M. H. Abrams, A Glossary of Literary Terms, Cengage Publishers, New Delhi.

Course Articulation Matrix - 221379

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	-	3	1	3	-	2
CO2	3	1	1	2	1	3	1	3	1	3	-	3
CO3	3	-	1	2	1	3	-	3	1	3	1	3
WA	**3**	**1**	**1**	**1.3**	**1**	**2.6**	**1**	**3**	**1**	**3**	**1**	**2.6**

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	10
Second Internal Test	10
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	40

Formative Assessment = 40 Makrs

Term End Examination = 60 Marks

Total = 100 Marks

Question Paper Pattern

III Semester BA Optional English

(For students admitted to the First Semester in 2021-22)

Title: DSC(5) British Literature upto 1800 - From Chaucer to the Age of Transition

Time: 2½ hours Marks : 60

Unit – 1

I. Answer TWO of the following: (2 questions out of 4 to be answered) (2x5=10)

a.
b.
c.
d.

II. Answer ONE of the following: (1 question out of 2 to be answered) (1x10=10)

a.
b.

Unit – 2

III. Answer TWO of the following: (2 questions out of 4 to be answered) (2x5=10)

(Questions on the author/texts covered in Unit – 3 are to be excluded in Unit – 2)

a.
b.
c.
d.

IV. Answer ONE of the following: (1 question out of 2 to be answered) (1x10=10)

a.
b.

Unit – 3

V. a) Answer ONE of the following:

(1 question out of 3 to be answered from Poetry) (1x5=5)

i.
ii.
iii.

b) Answer ONE of the following:

(1 question out of 2 to be answered from Prose) (1x5=5)

i.
ii.

c) Answer ONE of the following: (1x10=10)

(1 question out of 3 to be answered from the Drama - Dr. Faustus)

i.
ii.
iii.

** *** **

Semester III **Course Code: 221380**	**Title: DSC(6)** **Indian Literature in Translation**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03
Total Contact Hours: 42 Hours + 3 Hours (Activity)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcome

CO1 Understand the meaning and methods of translation

CO2 Comprehend the scope of translation in the modern age for a translation as a career.

CO3 Knowledge of Indian writers and literature in regional languages through English and appreciate the cultural ethos of India.

UNIT I INTRODUCTION TO TRANSLATION STUDIES	14 Hours
Introduction to Translation Studies in India : • Translation as Discovery - Sujit Mukherjee • Indian Literature in English Translation - G. N. Devy	
UNIT II REPRESENTATIVE TEXTS	14 Hours
Vachanas of Basavanna;No. 59 Cripple me Father, No. 97 The Master in the House Vachanas of Akkamahadevi: No. 26 and 73 (From Speaking of Siva) Kanakadasa: Do Not Quarrel over Caste (Translation by Dr. S. G. Vaidya) Songs of Sheriff (Translation by Dr. S. G. Vaidya)	
UNIT III REPRESENTATIVE TEXTS	14 Hours
Novel: • Chemmeen - T. S. Pillai **Short Stories**: • The Silent Rattle - Dr. Basu Bevinagidad • The Weed - Amrita Pritam • A Tale of 1947 - Sadat Hasan Manto • The Curd Seller - Masti	

Books recommended and Suggested Reading

1. Sujit Mukharjee. Translation as Discovery
2. Sharma T. R. S. (Ed). Ancient Indian Literature: An Anthology, (Vols 2: Classical Sanskrit, Prakrit, Apabhramsa), New Delhi: Sahitya Akademi, 2000
3. Kumar, Sukrita Paul (Ed). Cultural Diversity, Linguistic Plurality and Literary Traditions in India. New Delhi: Macmillan, 2005
4. Dev, Anjana et al (Ed) Indian Literature. New Delhi: Pearson, 2000

Course Articulation Matrix - 221380

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	-	2	2	-	1	2	3	1	3
CO2	3	1	1	1	2	2	-	2	3	3	1	3
CO3	3	1	1	1	2	2	1	2	1	3	1	3
WA	**3**	**1**	**1**	**1**	**2**	**2**	**1**	**1.6**	**2**	**3**	**1**	**3**

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	10
Second Internal Test	10
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	40

Formative Assessment = 40 Marks

Term End Examination = 60 Marks

Total = 100 Marks

Question Paper Pattern

III Semester BA Optional English

(For students admitted to the First Semester in 2021-22)

Title: DSC(6) Indian Literature in Translation

Time: 2½ hours Marks : 60

Unit – 1

I Answer TWO of the following: (2 questions out of 4 to be answered) (2x5=10)

a.
b.
c.
d.

II Answer ONE of the following: (1 question out of 2 to be answered) (1x10=10)

a.
b.

Unit – 2

III Answer TWO of the following: (2 questions out of 4 to be answered) (2x5=10)

a.
b.
c.
d.

IV Answer ONE of the following: (1 question out of 2 to be answered) (1x10=10)

a.
b.

Unit – 3

V a) Answer ONE of the following:
(1 question out of 3 to be answered from the Novel - Chemmeen) (1x10=10)

i.
ii.
iii.

b) Answer TWO of the following:
(2 questions out of 4 to be answered from Short Stories) (2x5=10)

i.
ii.
iii.
iv.

** *** **

Annexure: English Optional Syllabus

OPTIONAL ENGLISH (L2)

For Undergraduate Programs offered in

Syllabus for IV Semester B A in English (Basic / Hons.)

Title of the Paper-DSC-7 BRITISH LITERATURE (19th & 20TH CENTURY) (PART 2)

Semester IV **Course Code: 221479**	**Title: DSC(7) - British Literature (19th and 20th Century) Part - 2**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03
Total Contact Hours: 42 Hours + 3 Hours (Activity)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcome

CO1 Identify the canonical literature of England.

CO2 Gain knowledge of important trends and movements in British literature.

CO3 Distinguish the poets, playwrights and novelists of different periods and relate them to real life situation.

UNIT I	14 Hours
Romantic Poetry, Victorian Poetry, Pre-Raphaelite Poetry, Oxford Movement, Victorian Novel, 19th century Prose, Modern Poetry, War Poetry, Oxford Poets, Modern Novel, Modern Drama, Problem Plays, Irish Theatre Movement, Modern Prose	
UNIT II REPRESENTATIVE WRITERS, WORKS, TRENDS	14 Hours
William Wordsworth, Jane Austen, Charles Lamb, William Hazlitt, Walter Scott, Alfred Tennyson, Matthew Arnold, John Ruskin, Thomas Carlyle, Cardinal Newman, Thomas Hardy, Charles Dickens, T. S. Eliot, W.B. Yeats, W. H. Auden. G. B. Shaw, Virginia Woolf, D. H. Lawrence, Graham Green, Somerset Maugham, J. M. Synge, John Galsworthy etc.	
UNIT III REPRESENTATIVE TEXTS	14 hours
Poems • Dover Beach - Arnold • Ode on a Grecian Urn - John Keats • Journey of the Magi - T. S. Eliot • Second Coming - W. B. Yeats **Essays** • Unto this Last (Veins of Wealth) - John Ruskin • Enslaved by Civilization - D. H. Lawrence • On Letter Writing - A. G. Gardiner • With the Photographer - Stephen Leacock **Novel** • *Heart of Darkness* - Joseph Conrad	

Books recommended and Suggested Reading

1. Andrew Sanders, English Literature, OUP, 2005
2. Edward Albert, History of English Literature, OUP, 2014
3. M. H. Abrams, A Glossary of Literary Terms, Cengage Publishers, New Delhi.

Course Articulation Matrix - 221479

COS / POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	-	3	1	3	-	2
CO2	3	1	1	2	1	3	1	3	1	3	-	3
CO3	3	-	1	2	1	3	-	3	1	3	1	3
WA	**3**	**1**	**1**	**1.3**	**1**	**2.6**	**1**	**3**	**1**	**3**	**1**	**2.6**

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	10
Second Internal Test	10
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	40

Formative Assessment = 40 Marks

Term End Examination = 60 Marks

Total = 100 Marks

Question Paper Pattern

IV Semester BA Optional English
(For students admitted to the First Semester in 2021-22)
Title: DSC(7) British Literature (19th & 20th Century) Part-2

Time: 2½ hours **Marks : 60**

Unit – 1

I Answer TWO of the following: (2 questions out of 4 to be answered) (2x5=10)

a.
b.
c.
d.

II Answer ONE of the following: (1 question out of 2 to be answered) (1x10=10)

a.
b.

Unit – 2

III Answer TWO of the following: (2 questions out of 4 to be answered) (2x5=10)

a.
b.
c.
d.

IV Answer ONE of the following: (1 question out of 2 to be answered) (1x10=10)

a.
b.

Unit – 3

V a) Answer ONE of the following:
(1 question out of 3 to be answered from the Poetry) (1x5=5)

i.
ii.
iii.

b) Answer ONE of the following:
(2 questions out of 4 to be answered from Essays) (1x5=5)

i.
ii.
iii.
iv.

c) Answer ONE of the following: (1 question out of 3 to be answered from the Novel – Heart of Darkness) (1x10=10)

i.
ii.
iii.

** *** **

Title of the Paper – DSC – 8 GENDER STUDIES (PART 1)

Semester IV **Course Code: 221480**	**Course Title: DSC(8)** **Gender Studies (PART 1)**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03
Total Contact Hours: 42 Hours + 3 Hours (Activity)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcome

CO1 Realize the basic concepts of gender studies.

CO2 Modification of behavior after understanding the significance of Gender as a discourse.

CO3 Sensitization in the domain of Humanities and literature by women writers.

UNIT I INTRODUCTION TO GENDER STUDIES	14 Hours
Concepts and trends: Sex and Gender, Femininity, Body, Feminist Politics, Patriarchy, Masculinity, Discrimination, Gynocentrism, Dichotomy, Third Gender, Masculinity, Queer Studies etc. **Essays** • Toward Feminist Poetics - Elaine Showalter • What is patriarchy? /Understanding Gender - Kamala Bhasin	
UNIT II Representative Writers	14 Hours
• Stench of Kerosine -Amrita Pritam • Draupadi by Mahashweta Devi • The Shadow-Shashi Deshpande • Gulabi Talkies – Vaidehi	
UNIT III REPRESENTATIVE TEXTS	14 hours
Nine Indian Women Poets: An Anthology - Eunice D'Souza (Four Poems) 1. *Meeting Poets*-Eunice D'Souza 2. *My Grandmother's House*-Kamala Das 3. *Blessing*-Imtiaz Dharkar 4. *To a Daughter on Rakshabandhan* -Smita Agarwal **Novel** The Prison We Broke - Baby Kamble	

Books Recommended and Suggested Reading:

Butler, Judith. Gender Trouble: Feminism and the Subversion of Identity. Routledge, 1990 Connel, R. W. Masculinities. University of California Press, 1995

Course Articulation Matrix 221480

COS / POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	1	3	1	3	1	3	1	3
CO2	3	1	2	1	2	3	1	3	2	3	1	3
CO3	3	1	2	1	1	3	1	3	2	3	1	3
WA	**3**	**1.3**	**1.6**	**1**	**1.3**	**3**	**1**	**3**	**1.6**	**3**	**1**	**3**

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
First Internal Test	10
Second Internal Test	10
First Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Second Class Test/Oral Test/ Assignments/ Surveys/ Interviews	10
Total	40

Formative Assessment = 40 Marks

Term End Examination = 60 Marks

Total = 100 Marks

Question Paper Pattern
IV Semester BA Optional English
(For students admitted to the First Semester in 2021-22)
Title: DSC(8) Gender Studies - Part-1

Time: 2½ hours **Marks : 60**

Unit – 1

I Answer TWO of the following: (2 questions out of 4 to be answered) (2x5=10)

a.
b.
c.
d.

II Answer ONE of the following: (1 question out of 2 to be answered) (1x10=10)

a.
b.

Unit – 2

III Answer TWO of the following: (2 questions out of 4 to be answered) (2x5=10)

a.
b.
c.
d.

IV Answer ONE of the following: (1 question out of 2 to be answered) (1x10=10)

a.
b.

Unit – 3

V a) Answer TWO of the following:
(2 question out of 4 to be answered from the Poetry) (2x5=10)

i.
ii.
iii.
iv.

b) Answer ONE of the following:
(1 question out of 3 to be answered from the
Novel - The Prison We Broke) (1x10=10)

i.
ii.
iii.

** *** **

English Syllabus 2022-23
Board of Studies

Sl. No.	Name and address	Designation	Signature
01	Manjunath K R HoD – Department of English SBRR Mahajana First Grade College Mysuru manjunathkr.fgc@mahajana.edu.in	Chairman	K.R. Manjunath.
02	Dr. Vanamala S M Associate Professor Mandya P G Centre Mob. 9449789748 vanamalasm861@gmail.com	Member	S.M. Vanamala 20/10/22
03	Dr. Nataraj G Assistant Professor DoS in English, KSOU, Mysuru Mob. 9741219820 nataraj.g.ukkalagere@gmail.com	Member	
04	Dr. B.N. Shreekeerthy Assistant Professor DoS in English Jnanabharathi, University of Bangalore, Bengaluru Mob. 9739012854 drskeerthy@gmail.com	Member	ON LINE
05	Smt. Geetha D Assistant Professor Department of English SBRR Mahajana First Grade College, Mysuru Mob. 9945653221 geethalit@rediffmail.com	Member	Dgeetha
06	Ms. Spoorthi C S Assistant Professor St. Joseph's College, Hunsuru Mob. 8867091969 csspoorthi@gmail.com	Member	Absent

Mahajana Education Society (R.)
Education to Excel
SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)
Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF ENGLISH

UG ☑

PG ☐

NEP Syllabi

V and VI Semester BA Optional English

2023-24

DEPARTMENT OF ENGLISH

Motto

Write better, speak better

Vision

To mould the students to confront the global challenge

Mission

To inculcate values to become better
human beings through literature

Program Outcomes (POs) for Bachelor of Arts

PO1 **Domain knowledge:** Acquire knowledge of management theories and practices with special focus on professional accounting and finance.

PO2 **Problem Analysis:** Identify, formulate and analyze complex business problems in a structured approach to focus upon real issues.

PO3 **Design/Development of Solutions:** Developing solutions by using critical thinking and analytical reasoning with appropriate qualitative, quantitative techniques and software applications in solving business and research problems.

PO4 **Investigation and Research:** Implementation of research methods to investigate specific business problems and draw conclusions.

PO5 **Use of Modern Techniques/Tools:** Ability to analyze and interpret data using mathematical, statistical, ICT and risk management techniques to solve business problems.

PO6 **Business and Society**: Entrepreneurs/Managers with socio-economic value system.

PO7 **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and channelize inclination towards sustainable development.

PO8 **Moral and Ethical Values:** Assimilate ethical, value based leadership skills and moral principles.

PO9 **Individual and Team Work:** Ability to perform as an individual or leader in diverse settings.

PO10 **Communication:** Harness communication and leadership skills effectively to adapt to the growing business world.

PO11 **Project Management and Finance:** Design methods and process; apply skills and knowledge to complete projects in accordance with project acceptance criteria and financial considerations.

PO12 **Lifelong Learning:** Evolve and improve as an individual by updating knowledge to enable oneself to thrive in social and professional life.

List of Board of Studies Members

Sl. No.	Category	Name and Designation	Address for Communication	E-mail and Mobile No.
1	HoD & Chairman	Sri Manjunath K R Assistant Professor	SBRR Mahajana First Grade College (A), Mysore	manjunathkr.fgc@ mahajana.edu.in 9448493596
2	Faculty Member	Ms. Geetha D Assistant Professor	SBRR Mahajana First Grade College, Mysore	geethalit@rediffmail.com 9945653221
3	Two Experts from external university	1. Dr. Nataraj G Assistant Professor	DoS in English, KSOU, Mysuru	nataraj.g.ukkalagere@ gmail.com 9741219820
		2. Dr. B.N. Shreekerthy Assistant Professor	DoS in English, Jnanabharathi, University of Bangalore, Bengaluru	drskeerthy@gmail.com 9739012854
4	Nominee by the Vice Chancellor	Dr. Vanamala S M Associate Professor	Mandya P G Centre, Mandya	vanamalasm861@gmail.com 9449789748
5	Alumnus	Ms. Spoorthi C S Assistant Professor	St. Joseph's College, Hunsuru	cssporrthi@gmail.com 8867091969

Course Structure (NEP)

DSC Optional English

III Year

Course Code, Course Type and Title	L:T:P	Credits	Teaching Hours per Week	Total No. of Hrs	Maximum Marks			Total Marks	Exam Duration
					IA		Exam		
					C1	C2	C3		
V Semester									
231579 DSC(9) Literary Criticism	4:0:0	4	04	60	20	20	60	100	2½
231580 DSC(10) Subaltern Studies	4:0:0	4	04	60	20	20	60	100	2½
231581 DSC(11) Life Narratives	4:0:0	4	04	60	20	20	60	100	2½
VI Semester									
231679 DSC(12) Post-Colonial Studies	4:0:0	4	04	60	20	20	60	100	2½
231680 DSC(13) Introduction to the History of the English Language	4:0:0	4	04	60	20	20	60	100	2½
231681 DSC(14) Women's Writing	4:0:0	4	04	60	20	20	60	100	2½

:

Objectives:

1. Explore texts and contexts of writings and readings from varied spaces in English Literature.
2. Connect liberal arts, humanities and social sciences through a multidimensional curriculum.
3. Develop the students' ability to read, process, think critically and independently.
4. Establish necessary skills of interpreting analyzing a text for a multidisciplinary approach towards higher studies and research.
5. Develop in students an inclusive outlook to inculcate ethical and moral values for a sense of social commitment.
6. Introduce multiple areas of writings in English language and translations in English.
7. Train students in skills for a relevant career in literary field – creative writing, translation and publishing.
8. To equip students with qualities of sympathy and empathy for lifelong learning.

English Optional Syllabus

For Undergraduate Programs offered in B A Optional English

Syllabus for V Semester

Title of the Paper – DSC(9), Literary Criticism

Semester V **Course Code: 231579**	**Title: DSC(9) Literary Criticism**
Course Credits: 04 (4:0:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes :

CO1 Define key critical terms and concepts and familiarize themselves with key literary critics and their contributions to the field of criticism.

CO2 Explore major literary movements and paradigms and understand how they shaped literary criticism during different historical contexts

CO3 Analyze different methods and approaches used in literary criticism.

CO4 Reflect on the relevance of literary criticism in the contemporary world, acknowledging its impact on the interpretation and appreciation of literature in different cultural and intellectual contexts.

Content of Course 9: Literary Criticism	**60 Hrs**
Unit- 1 Introduction to Criticism	**15 Hrs**
What is Criticism? Meaning, Definitions, Functions, Methods of Criticism. **Introduction to the following critics**: Philip Sydney, John Dryden, Alexander Pope, Samuel Johnson, William Wordsworth, S T Coleridge, P B Shelley, Mathew Arnold, D H Lawrence, Virginia Woolf, T S Eliot, F R Leavis, IA Richards	
Unit – 2 Classical Criticism	**15 Hrs**
• Aristotle's Concept of Tragedy • Longinus Concept of Sublime	
Unit – 3 Romantic Criticism	**15 Hrs**
• Coleridge's 'Concept of Imagination • Preface to the Lyrical Ballads - William Wordsworth • Walter Pater's Essay on Style from *Appreciations*	
Unit – 4 Modern Criticism	**15 Hrs**
• Why the Novel Matters - D H Lawrence • Metaphysical Poets - T S Eliot • Four of Kinds of Meaning - IA Richards	

Books recommended and Suggested Reading

1. Adams, Hazard. *Critical Theory Since Plato.* New York, Harcourt Brace Jovanovich, 1971.
2. Baldick, Chris. *The Oxford Dictionary of Literary Terms.* Oxford: Oxford University Press, 2001.
3. Barry, Peter. *Beginning Theory: An Introduction to Literary and Cultural Theory.* New Delhi: Viva Books, 2008.
4. Habib, M.A. R. *A History of Literary Criticism: From Plato to the Present.* London: Blackwell, 2005.
5. https://www.egyankosh.ac.in/bitstream/123456789/22610/1/Unit-1.pdf

Pedagogy: Lectures, Seminar, Role play, Group Discussion

Formative Assessment	
Assessment Type	**Weightage in Marks**
Internal Test	20
Oral Test/ Assignments/ Surveys/ Interviews	20
Total	40

Formative Assessment = 40 Marks

Term End Examination = 60 Marks

Total = 100 Marks

Course Articulation Matrix - 231579

POs / COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	1	1	1	2	2	3	2	3	-	3
CO2	3	3	2	2	1	3	1	3	3	3	1	3
CO3	3	2	2	1	1	2	1	2	2	3	1	3
CO4	3	2	2	1	2	3	1	3	2	3	-	3
WA	**3**	**2.5**	**1.75**	**1.25**	**1.25**	**2.5**	**1.25**	**2.5**	**2.5**	**3**	**0.5**	**3**

English Optional Syllabus

For Undergraduate Programs offered in B A Optional English

Syllabus for V Semester

Title of the Paper – DSC(10), Subaltern Studies

Semester V **Course Code: 231580**	**Title: DSC(10) Subaltern Studies**
Course Credits: 04 (4:0:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes:

CO1 A critical insight into subaltern consciousness and engaging critically with issues of subalternity, caste, and historiography in postcolonial contexts.

CO2 Develop the ability to analyze and interpret complex socio-cultural narratives, fostering a deeper understanding of the novel's themes, characters, and their relevance in the context of gender dynamics and societal structures in rural India.

CO3 Appreciate the role of drama as a medium for examining human complexities and identifying various manifestations of patriarchy and its impact on the lives of women

CO4 Understand the nature of Dalit life and writing and explore the relationship between literature and activism for a change in society

Content of Course 10: Subaltern Studies	**60 Hrs**
Unit- 1 Introduction	**15 Hrs**
• Annihilation of Caste (Essay) - Dr. B.R. Ambedkar • Caste and Subaltern Consciousness - Partha Chatterjee • On Some Aspects of Historiography of Colonial India - Ranajit Guha	
Unit – 2 Fiction	**15 Hrs**
• *Rudaali* - Mahasweta Devi	
Unit – 3 Play	**15 Hrs**
• *Jokumaraswamy* - Chandrashekhara Kambara	
Unit – 4 Prose	**15 Hrs**
• *Karukku* - Bama	

Books recommended and Suggested Reading

1. Guha, Ranajit (ed.). *A Subaltern Studies Reader.* Oxford University Press, Delhi, 2000.
2. Guha, Ranajit (ed.). *Subaltern Studies: Writings on South Asian History and Society.* OUP, New Delhi, 1982
3. Chakrabarty, Dipesh. "Subaltern Studies in Retrospect and Reminiscence," *South Asia: Journal of South Asian Studies,* vol. 38, no. 1,2015
4. Spivak, Gayatri Chakravorty, *Can the Subaltern Speak? Reflections on the Hist01Y of an Idea,* 1988.
5. https://in.video.search.yahoo.com/search/video?fr=mcafee&ei=UTF-8&p=subaltern+studies&vm=r&type=E210IN714G0#id=2&vid=009b23c72c4a14ec4c343295c7fa25d5&action=view
6. https://egyankosh.ac.in/bitstream/123456789/44479/1/Unit-25.pdf
7. https://www.youtube.com/watch?v=fwBparioJuU

Pedagogy: Lectures, Seminar, Role play, Group Discussion

Formative Assessment	
Assessment Type	**Weightage in Marks**
Internal Test	20
Oral Test/ Assignments/ Surveys/ Interviews	20
Total	40

Formative Assessment = 40 Marks

Term End Examination = 60 Marks

Total = 100 Marks

Course Articulation Matrix – 231580

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	2	2	3	1	3	2	3	-	3
CO2	3	3	1	2	2	3	1	3	3	3	1	3
CO3	3	3	1	2	1	3	1	3	3	3	1	3
CO4	3	3	1	2	1	3	1	3	3	3	-	3
WA	**3**	**3**	**1.25**	**2**	**1.5**	**3**	**1.23**	**3**	**2.75**	**3**	**0.5**	**3**

English Optional Syllabus

For Undergraduate Programs offered in B A Optional English

Syllabus for V Semester

Title of the Paper – DSC(11), Life Narratives

Semester V **Course Code: 231581**	**Title: DSC(11) Life Narratives**
Course Credits: 04 (4:0:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes:

CO1 Demonstrate a comprehensive understanding of various forms of life narratives, including autobiographies, biographies memoirs, and diaries.

CO2 Analyze the cultural and societal contexts that shaped Mary Kom's life and career, fostering an understanding of the broader issues of gender, identity, and sports in India.

CO3 Demonstrate advanced skills in textual analysis and interpretation, allowing them to critically engage with the narrative styles, themes, and perspectives presented in these autobiographical works.

CO4 Recognize the value of biographical literature in providing insights into the lives and motivations of influential figures in history.

Content of Course 11: Life Narratives	**60 Hrs**
Unit- 1 Introduction to Life Narratives	**15 Hrs**
• What are Life Narratives? - Genres of Life Writings- • "Introduction" to *The New Critical Idiom: Autobiography* – Linda Anderson	
Unit – 2 Autobiography	**15 Hrs**
• *Unbreakable* - M C Mary Kom	
Unit – 3 Memoirs & Diaries	**15 Hrs**
• *Memoirs of My Working Life* (Chapter 6)- Sir M Visvesvaraya • *My Dateless Diary* - R. K. Narayan	
Unit – 4 Biography	**15 Hrs**
• C. *V.Raman: A Biography* - Uma Parameswaran	

Books recommended and Suggested Reading

- Anderson, Linda. *Autobiography.* Routledge, London, 2011.
- Anderson, Linda. *Women and Autobiography in the Twentieth Century: Remembered Futures.* Prentice hall, Harvester Wheatsheaf, London, 1997.

- Andrews, William L, and Douglas Taylor. *Richard Wright's Black Boy (American Hunger): A Casebook.* Oxford University Press, New York, 2003.
- Baggerman et al (eds.). *Controlling Time and Shaping the Self: Developments in Autobiographical Writing since the Sixteenth Century.* Brill, Leiden, 2011.
- Lejeune, Philippe. *On Autobiography.* U of Minnesota P, Minneapolis, 1988.
- Lionett, Francoise. *Autobiographical Voices:Race, Gender, Self-Portraiture.* Cornell UP, Ithaca, 1991
- Smith, Sidonie A. & Julia Watson, eds. *Reading Autobiography: A Guide for Interpreting Life Narratives.* U of Minnesota P, Minneapolis, 2001.
- Weintraub, Karl J. *The Value of the Individual: Self and Circumstance in Autobiography.* Chicago UP, Chicago, 1982.
- https://www.researchgate.net/publication/349212173_Rupkatha_My_Dateless
- https://rupkatha.com/V12/n3/v12n327.pdf

Pedagogy: Lectures, Seminar, Role play, Group Discussion

Formative Assessment	
Assessment Type	**Weightage in Marks**
Internal Test	20
Oral Test/ Assignments/ Surveys/ Interviews	20
Total	40

Course Articulation Matrix - 231581

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	-	-	1	1	1	3	3	3	-	3
CO2	3	3	-	1	1	1	1	3	3	3	-	3
CO3	3	3	1	2	1	1	1	3	3	3	1	3
CO4	3	2	1	1	1	1	1	3	3	3	1	3
WA	**3**	**2.75**	**0.75**	**1**	**1**	**1**	**1**	**3**	**3**	**3**	**0.5**	**3**

V Semester BA Optional English
(For students admitted to the First Semester in 2021-22)
Question Paper Pattern For DSC Papers (9,10 & 11)

Time: 2½ hours Marks : 60

Unit – 1

1. Answer **FIVE** of the following in a word, phrase or sentence (out of Eight) **(5x1=5)**

a.
b.
c.
d.
e.
f.
g.
h.

2. Write **Short Notes on Two** of the following (out of Four) **(2x5=10)**

a.
b.
c.
d.

Unit – 2

3. Answer **Three** of the following in about a page each (out of Four) **(3x5=15)**

a .
b.
c.
d.

Unit – 3

4. Answer **Three** of the following in about a page each (out of Four) **(3x5=15)**

a .
b.
c.
d.

Unit – 4

5. Answer **Three** of the following in about a page each (out of Four) **(3x5=15)**

a .
b.
c.
d.

** *** **

English Optional Syllabus

For Undergraduate Programs offered in B A Optional English
Syllabus for VI Semester
Title of the Paper – DSC(12), Postcolonial Studies

Semester VI **Course Code: 231679**	**Title: DSC(12) Postcolonial Studies**
Course Credits: 04 (4:0:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes:

CO1 Define key critical terms and concepts relating to Postcolonialism

CO2 Develop advanced skills in textual analysis and critical thinking, allowing them to engage with complex literary and theoretical texts in the field of postcolonial studies.

CO3 Ability to critically analyze literary and non-literary texts, identifying the underlying themes, symbols, and rhetorical strategies used by the authors to convey their messages.

CO4 Ability to explore the consequences of cultural collision and the struggle for identity in a changing world and appreciation for the values and traditions of an indigenous culture

Content of Course 12: Postcolonial Studies	**60 Hrs**
Unit- 1 Introduction to Postcolonial Studies	**15 Hrs**
• Key Concepts: Colonial Discourse, Colonialism, Decolonization, Hegemony, Hybridity, Imperialism, Nationalism, Orientalism, Postcolonialism, the Subaltern Text: *Minutes on Indian Education* - Macaulay	
Unit – 2 Essays on Postcolonial Studies	**15 Hrs**
• "The Beginnings of English Literary Study in British India" – Gauri Vishwanathan • "On National Cultures" from *The Wretched of the Earth* - Frantz Fanon (Source: *Literature in The Modern World: Critical Essays and Documents* Edited by Dennis-Walder) • Introduction to *Colonialism/Postcolonialism* - Ania Loomba	
Unit – 3 Postcolonial Texts and Talks	**15 Hrs**
• *The Danger of a Single Story* - Chimamanda Adichie (TED Talk, Transcript) Source: https://www.hohschools.org/cms/lib/NYO19 13703/Centricitv/Domain/817/English%2012%20Summer%20Reading%20 %202018.pdf • Toba Tek Singh (short story) - Saadat Hasan Manto • Caste Out (poem) - Meena Kandasamy	
Unit – 4 Fiction	**15 Hrs**
• *Things Fall Apart* – Chinua Achebe	

Books recommended and Suggested Reading

- Abrams M H, and Harpham. *A Glossary of Literary Terms.* Cengage Learning, New Delhi, 2014.
- Barry, Peter. *Beginning theory: An introduction to literary and cultural theory. MUp,* Manchester, 2017.
- Vincent B. , et al., *The Norton Anthology of Theory and Criticism,* WW Norton and Company, London, 2018.
- https://www.postcolonialweb.org/courses/related.html
- https://www.youtube.com/watch?v=tLCUd33l6y8 (Things Fall Apart lecture1)
- https://www.youtube.com/watch?v=59TO8tX5gIY (Things Fall Apart lecture 2)

Pedagogy: Lectures, Seminar, Role play, Group Discussion

Formative Assessment	
Assessment Type	**Weightage in Marks**
Internal Test	20
Oral Test/ Assignments/ Surveys/ Interviews	20
Total	40

Course Articulation Matrix - 231679

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	2	1	1	2	2	3	1	3
CO2	3	3	3	1	1	2	1	3	1	3	1	3
CO3	3	3	3	2	1	1	1	3	1	3	1	3
CO4	3	2	2	1	1	1	1	3	1	3	1	3
WA	**3**	**2.25**	**2.25**	**1.25**	**1.25**	**1.25**	**1**	**2.75**	**1.25**	**3**	**1**	**3**

English Optional Syllabus

For Undergraduate Programs offered in B A Optional English

Syllabus for VI Semester

Title of the Paper – DSC(13), Introduction to the History of the English Language

Semester VI **Course Code: 231680**	**Title: DSC(13) Introduction to the History of the English Language**
Course Credits: 04 (4:0:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes:

CO1 Identify and explain key milestones in the evolution of the English language, tracing its journey from its earliest forms to the present.

CO2 An in-depth understanding of the growth of the English language under the influence of various other languages including Latin and French.

CO3 Recognize the significance of Bible translators in shaping the English language and assess the contributions of significant writers in defining and promoting standard English.

C04 Appreciate the complexity of the evolution of the English language and analyze how cinema, electronic, digital, and social media have influenced the contemporary English language, exploring the impact of technology and popular culture.

Content of Course 13: Introduction to the History of the English Language	**60 Hrs**
Unit- 1 Origin of the English Language	**15 Hrs**
Language Families Indo-European Family of Languages English as part of the Germanic Family Landmarks in the Development of the English Language	
Unit – 2 Influences on English Vocabulary	**15 Hrs**
Latin Influence Medium, Equivalent, Index, Genius, Scribe, Church, Memento, Ego, Complex, Legitimate, Vacuum, Minimum, Status, Fungus, Species. **Greek Influence** Graph, Phone, Character, Chorus, Academy, Bible, Harmony, Ecstasy, Nymph, Tragedy, Tyrant, Theatre, Irony, Alphabet, Drama, Elegy, Pathos, Epic, Theory, Museum, Hyphen, Dogma, Psychology, Neurology	

French Influence Court, Chancellor, Warden, Guardian, Guarantee, Warrant, Prior, Baptist. Cardinal, Castel, Chapel, Grace, Service, Ballet, Champagne, Naive, Soup, Penchant, Profile, Restaurant, Menu, Chef, Baton. **Other Influences** Scandinavia: Fellow, Wrong, Urge, Outlaw, Snare, Hit, Take, Root, They, Their, Them, Skill, Wing, Ugly, Sky, Weak, Loan, Both, Bleak, Same, Husband, ill. India: Nirvana, Swastika, Karma, Ahimsa, Sahib, Nawab, Mongoose, Bungalow, Vishnu, Bangle, Shampoo, Khushi, Khaki, Juggernaut, Catamaran, Cheroot. **Arab** Algebra, Cipher, Zenith, Saffron, Admiral, Cotton, Amber, Assassin, Magazine, Fakir, Imam, Madrasah, Harem, Gazelle.	
Unit – 3 Makers of the English Language	**15 Hrs**
• Bible Translators, William Shakespeare, Edmund Spenser, John Milton, Dr. Johnson, William Wordsworth	
Unit – 4 English Language Development	**15 Hrs**
Development of Spelling and Pronunciation; Development of English; Dictionaries; Standard English; English as World Language; Varieties of English; Influence of Radio and Television on the English language; Influence of Cinema and Pop Culture on the English Language; Influence of social media on the English language	

Books recommended and Suggested Reading

- Wrenn C. L. *The English Language.* Vikas Publishing, India, 2022.
- Baugh A. C. *A History of English Language.* Routledge, India, 2012.
- Emerson and Oliver Farrar. *An Outline History of the English Language.* MacMillan, New York, 1906.
- Crystal David. *English as a Global Language.* Cambridge University Press, New York, 1997.
- https://docenti.unimc.it/carla.cucina/teaching/2017/17413/files/baugh-cable-a-history-of-the-english-language

Pedagogy: Lectures, Seminar, Role play, Group Discussion

Formative Assessment	
Assessment Type	**Weightage in Marks**
Internal Test	20
Oral Test/ Assignments/ Surveys/ Interviews	20
Total	40

Course Articulation Matrix – 231680

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	3	1	1	1	3	1	3	-	3
CO2	3	3	1	2	1	1	1	3	2	3	-	3
CO3	3	3	1	3	1	1	1	3	2	3	1	3
CO4	3	3	1	2	1	1	1	3	2	3	**1**	3
WA	**3**	**3**	**1**	**2.5**	**1**	**1**	**1**	**3**	**1.75**	**3**	**0.5**	**3**

English Optional Syllabus

For Undergraduate Programs offered in B A Optional English

Syllabus for VI Semester

Title of the Paper – DSC(14), Women's Writing

Semester VI **Course Code: 231681**	**Title: DSC(14) Women's Writing**
Course Credits: 04 (4:0:0)	**Hours of Teaching/Week:** 04
Total Contact Hours: 60 Hours	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO1 Understand the historical and cultural context of women's writing in India from early times to modern times and analyze the challenges and constraints faced by women writers during this period.

CO2 Interpret the poetic works of women writers from diverse cultural backgrounds to discuss the themes of gender, identity, and empowerment in the poems.

CO3 Evaluate the role of women writers in reshaping the genre of short fiction.

CO4 Reflect on the significance of That Long Silence as a work of feminist literature in the Indian context.

Content of Course 14: Women's Writing	**60 Hrs**
Unit- 1 Introduction to Women's Writing	**15 Hrs**
• Introduction to *Women Writing in India: 600 B.* C. *to the Early Twentieth Century* - Susie Tharu and K Lalitha – Eds • Chapter One - *A Room of One's Own* - Virginia Woolf	
Unit – 2 Poems	**15 Hrs**
• Palanquin Bearers - Sarojini Naidu • She - Lakshmi Kannan • Women Like Me - Maram Al-Massri • Phenomenal Woman - Maya Angelou • Flying Inside Your Own Body - Margaret Atwood	
Unit – 3 Short Stories	**15 Hrs**
• "Two Words" - Isabel Allende • "Interpreter of Maladies" - Jhumpa Lahiri • "Theft" - Katherine Anne Porter • "Jungle Major" - Temsula Ao	
Unit – 4 Novel	**15 Hrs**
• *That Long Silence* - Shashi Deshpande	

Books recommended and Suggested Reading

- Lalita Ke, Susie J. Tharu, editors. *Women Writing in India: 600 R.C. to the early twentieth century.* Feminist Press, New York, 1991.
- Woolf Virginia. *A Room of One's Own.* Hogarth Press, London, 1929.
- Simone de Beauvoir. *The Second Sex.* Penguin Random House, New York, 1972.
- Gilbert Sandra M and Susan Guber, editors. *The Madwoman in the Attic: The Woman Writer and the Nineteenth-Century Literary Imagination.* Yale University Press, New Heaven Conn. and London, 2000.
- Elaine Showalter, *A Literature of Their Own.* Princeton University Press, USA,1999.
- Essay to be read: Helen Carr, "A History of Women's Writing" and Mary Eagleton, "Literary Representations of Women" https://mthoyibi.files.wordpress.com/2011/09/05-history-of-feminist-literarycriticism gill-plain-andsus. pdf
- https://oyc.yale.edu/english/engl-300/lecture-20
- https://ijcrt.org/papers/IJCRT2302227.pdf
- https://www.researchpublish.com/upload/book/Indian%20Feminism%20in%20Shashi-7572.pdf

Pedagogy: Lectures, Seminar, Role play, Group Discussion

Formative Assessment	
Assessment Type	**Weightage in Marks**
Internal Test	20
Oral Test/ Assignments/ Surveys/ Interviews	20
Total	40

Course Articulation Matrix – 231681

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	2	2	1	3	1	3	1	3
CO2	3	3	1	1	2	2	1	3	2	3	1	3
CO3	3	3	2	2	1	3	1	3	2	3	1	3
CO4	3	3	2	2	1	1	1	3	2	3	1	3
WA	**3**	**2.75**	**1.75**	**1.75**	**1.5**	**2**	**1**	**3**	**1.75**	**3**	**1**	**3**

VI Semester BA Optional English
(For students admitted to the First Semester in 2021-22)
Question Paper Pattern For DSC Paper (12)

Time: 2½ hours Marks : 60

Unit – 1

1. Answer **FIVE** of the following in a word, phrase or sentence (out of Eight) **(5x1=5)**

a.
b.
c.
d.
e.
f.
g.
h.

2. Write **Short Notes on Two** of the following (out of Four) **(2x5=10)**

a.
b.
c.
d.

Unit – 2

3. Answer **Three** of the following in about a page each (out of Four) **(3x5=15)**

a .
b.
c.
d.

Unit – 3

4. Answer **Three** of the following in about a page each (out of Four) **(3x5=15)**

a .
b.
c.
d.

Unit – 4

5. Answer **Three** of the following in about a page each (out of Four) **(3x5=15)**

a .
b.
c.
d.

** *** **

VI Semester BA Optional English
(For students admitted to the First Semester in 2021-22)
Question Paper Pattern for DSC (13)

Introduction to the History of the English Language

Time: 2½ hours Marks : 60

Unit – 1

1. Write **Short Notes** on **THREE** of the following (out of Four) **(3x5=15)**

a.
b.
c.
d.

Unit – 2

2. Identify the origin of **FIFTEEN** of the following words (out of Twenty) **(15x1=15)**

a)	e)	i)	m)
b)	f)	j)	n)
c)	g)	k)	o)
d)	h)	l)	p)

Unit – 3

3. Answer **Three** of the following in about a page each (out of Four) **(3x5=15)**

a .
b.
c.
d.

Unit – 4

4. Answer **Three** of the following in about a page each (out of Four) **(3x5=15)**

a .
b.
c.
d.

** *** **

VI Semester BA Optional English
(For students admitted to the First Semester in 2021-22)
Question Paper Pattern for DSC (14)

Time: 2½ hours Marks : 60

Unit – 1

1. Write **Five** of the following in a word, phrase or sentence (out of Eight; from Women Writing in India) **(5x1=5)**
   a.
   b.
   c.
   d.
   e.
   f.
   g.
   h.

2. Write **Short Notes** on **Two** of the following (out of Four; from *A Room of One's Own*) **(2x5=10)**
   a .
   b.
   c.
   d.

Unit – 2

3. Answer **Three** of the following in about page each (out of Four) **(3x5=15)**
   a .
   b.
   c.
   d.

Unit – 3

4. Answer **Three** of the following in about a page each (out of Four) **(3x5=15)**
   a .
   b.
   c.
   d.

Unit – 4

5. Answer **Three** of the following in about a page each (out of Four) **(3x5=15)**
   a .
   b.
   c.
   d.

** *** **

English Syllabus 2023-24

Board of Studies

Sl. No.	Name and address	Designation	Signature
01	Manjunath K R HoD – Department of English SBRR Mahajana First Grade College Mysuru manjunathkr.fgc@mahajana.edu.in	Chairman	K.R. Manjunath
02	Dr. Vanamala S M Associate Professor Mandya P G Centre Mob. 9449789748 vanamalasm861@gmail.com	Member	S.M.Vanamala 7/9/23
03	Dr. Nataraj G Assistant Professor DoS in English, KSOU, Mysuru Mob. 9741219820 nataraj.g.ukkalagere@gmail.com	Member	Absent
04	Dr. B.N. Shreekeerthy Assistant Professor DoS in English Jnanabharathi, University of Bangalore, Bengaluru Mob. 9739012854 drskeerthy@gmail.com	Member	ONLINE
05	Smt. Geetha D Assistant Professor Department of English SBRR Mahajana First Grade College, Mysuru Mob. 9945653221 geethalit@rediffmail.com	Member	Dgeetha 7/9/23
06	Ms. Spoorthi C S Assistant Professor St. Joseph's College, Hunsuru Mob. 8867091969 csspoorthi@gmail.com	Member	Absent

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Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF ENVIRONMENTAL SCIENCE

UG ☑

PG ☐

Revised NEP Syllabi for I and II Semester Environmental Studies (AECC)

2022-23

DEPARTMENT OF ENVIRONMENTAL SCIENCE

Motto

Environmental Education for
Sustainable Life

Vision

To sensitize the people about environmental protection, conservation and equitable use of resources for sustainable livelihood

Mission

To develop a positive action for improving the environment using a practical approach based on observations

Program Outcome (PO) Attributes

PO1	Domain Knowledge
PO2	Problem Analysis
PO3	Design and Development of Solutions
PO4	Investigation & Research
PO5	Use of Modern Techniques/Tools
PO6	Impact on Society
PO7	Environment and Sustainability
PO8	Moral and Ethical Values
PO9	Individual and Team Work with Time Management
PO10	Communication
PO11	Project Management and Finance
PO12	Life-long Learning

List of BoS members

Sl. No.	Category	Name & Designation	Address for Communication	e-Mail & Mobile No.
1	Chairperson	Smt. Sunitha MH Assistant Professor & HoD	Department of Environmental Science SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	sunithamh.fgc@mahajana.edu.in 9663679317
2	Two Experts from Other University	Dr.Shivaraju H Puttaiah Assistant Professor and academy coordinator	Course Coordinator, Environmental Sciences, JSS academy of higher education & research, JSS University, Mysore	shivarajuenvi@gmail.com 8277102057
3		Saritha HB Assistant Professor in Environmental Studies	Amritha school of arts and science ,Mysore-570026	sarithahb@gmail.com 9986895034
4	Nominee by the Vice Chancellor	Dr N.S.Raju Professor and Chairman	Post graduation Department of Studies in Environmental Science, Manasagangothri, Mysore	nsrajuenv@yahoo.com 9448345959
5	Alumnus	Praphul.G Junior research biologist - Conservation Biology	Salim Ali Centre for Ornithology and Natural History. Anaikatty P.O., Coimbatore 641108, Tamil Nadu, India	Praphulgopal.btr@gmail.com 9483902056

Course Structure (NEP)

ABILITY ENHANCEMENT COMPULSORY COURSE (AECC)

I Year

Course Type, Code and Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L: T:P	C1	C2	C3		Marks
Environmental Studies– I/II Sem									
AECC	BA/BCA/BSc/BCom/BBA : 22EVSF26	3	-	3:0:0	20	20	60	2hr 30 mins	100

ABILITY ENHANCEMENT COMPULSORY COURSE:AECC for All Courses

NOTE: This Papers will be handled by the Department of Environmental Science for all I /II Semester B.Com./B.B.A/B.Sc/B.A./BCA/BBA (H&H)/BBA (A&Intl.T)

AECC Module

Course Code: 22EVSF26	**Course Title: Environmental Studies**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hour (Theory)
Total Contact Hours: 45 Hours (Class room based and Field work)	**Formative Assessment Marks:** 40
Exam Duration: 2 Hour 30 Minutes(Theory)	**Semester End Examination Marks:** 60

COURSE OUTCOMES (COs):

CO 1: Imbibe ecological perspective and value of environment, along with significance of various natural resources and its management.

CO 2: Analyze and Implement biodiversity techniques and pollution concepts.

CO3: Analyze global environmental problems and design possible solutions for sustainable development.

Content of ENVIRONMENTAL STUDIES – AECC		**45 Hours**
Unit 1	**Chapter 1: Introduction to Environmental Studies:** • Multidisciplinary nature of environmental studies. • Scope and importance; Concept of sustainability and sustainable development.	**2**
	Chapter 2: Ecosystems • What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, foodwebs and ecological succession. Case studies of the following ecosystems: a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)	**6**

	Chapter 3: Natural Resources: Renewable and Non-Renewable Resources • Land resources and land-use change; Land degradation, soil erosion and desertification. • Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations. • Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (International & Inter-state). • Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.	**7**
Unit 2	**Chapter 4: Biodiversity and Conservation** • Levels of biological diversity: Genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hotspots. • India as a mega-biodiversity nation; Endangered and endemic species of India. • Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity • Ecosystem and biodiversity services: Ecological, economic,social, ethical, aesthetic and Informational value.	**8**
	Chapter 5: Environmental Pollution • Environmental Pollution: Types, causes, effects andcontrols; Air, water, soil and noise pollution. • Nuclear hazards and human health risks. • Solid waste management, Control measures of urban and industrial waste. • Pollution case studies.	**7**
Unit 3	**Chapter 6: Environmental Policies and Practices** • Climate change, global warming, ozone layer depletion,acid rain and impacts on human communities and agriculture. • Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Preventionand Control of Pollution) Act; Wildlife (Protection) Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and	**7**

	Convention on Biological Diversity (CBD). • Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.	
	Chapter 7: Human Communities and the Environment • Human population growth: Impacts on environment, human health and welfare. • Resettlement and rehabilitation of project affected persons; case studies. • Disaster management: Floods, Earthquake, Cyclones andLandslides. • Environmental movements: Chipko, Silent valley, Bishnoisof Rajasthan. • Environmental ethics: Role of Indian and other religions and cultures in environmental conservation. • Environmental communication and public awareness, casestudies (e.g., CNG vehicles in cities).	**6**
	Chapter 8: Field work (Any two) • Visit to an area to document environmental assets: river/forest/flora/fauna, etc. • Visit to a local polluted site- urban/Rural/Industrial/ Agricultural. • Study of common plants, insects, birds, and basic principlesof identification. Study of simple ecosystems – pond, river, Delhi ridge, etc.	**2**

Reference

Bharucha, E. (2015). *Text book of Environmental Studies*.Carson, R.

(2002). *SilentSpring*. Houghton Mifflin Harcourt.

Climate Change: Science and Politics. (2021). *Centre Science and Environment*, New Delhi.

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Groom,MarthaJ.,GaryK.Meffe,and CarlRonald Carroll.(2006).*Principles of Conservation Biology*. Sunderland: Sinauer Associates.

McCully, P. (1996). *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.

McNeill, John R. (2000). *Something New Under the Sun: An Environmental History ofthe Twentieth Century*.

Nandini,N., SunithaN., & SucharitaTandon.(2019). *A textbook on Environmental Studies (AECC)*. Sapna Book House, Bengaluru.

Odum, E.P., Odum, H.T. & Andrews,J.(1971). *Fundamentals of cology*. Philadelphia: Saunders.

Pepper, I.L, Gerba, C.P. & Brusseau, M.L. (2011). Env*ironmental and PollutionScience*. Academic Press.

Rajit Sengupta and Kiran Pandey.(2021). *State of India's Environment 2021: In Figures*. Centre Science and Environment.

Raven, P.H., Hassenzahl, D.M. & Berg, L.R. (2012). *Environment*. 8th Edition. John Wiley & Sons.

Rosencranz,A., Divan,S., & Noble,M.L. (2001). *Environmental law and policy in India*.

Sengupta, R. (2003). *Ecology and economics: An approach to sustainabledevelopment*. OUP.

Singh,J.S.,Singh,S.P.andGupta,S.R.(2014).*Ecology,EnvironmentalScienceand Conservation*. S.Chand Publishing, NewDelhi.

Sodhi,N.S., Gibson,L .& Raven,P.H.(Eds).(2013). Conse*rvation Biology: Voices from the Tropics*. John Wiley & Sons.

Wilson, E. O. (2006). *The Creation: An appeal to save life on Earth*. New York:Norton.

World Commission on Environment and Development.(1987). *Our Common Future* . Oxford University Press .

Websites:

https://www.nature.com

https://frontiersin.org

https://www.goodnet.org

https://www.springer.com

https://cpcb.nic.in

Course Articulation Matrix – 22EVSF26

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
CO1	2	1	-	1	1	2	3	2	1	2	-	3
CO2	3	2	1	2	2	2	3	3	2	2	1	3
CO3	2	2	1	1	2	2	3	3	3	2	1	3
Wt. Avg.	2.33	1.7	1	1.33	1.7	2	3	2.7	2	2	1	3

Continuous Formative Evaluation/Internal Assessment

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively.

	THEORY
Total Marks	100 Marks
Continuous Assessment – 1 (C1)	20 Marks
Continuous Assessment – 2 (C2)	20 Marks
Semester End Examination (C3)	60 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with

the concerned teacher shall decide about the genuineness of thecase and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Assessment Test -1	20	-	20
Seminar/Presentation/Assignment/Activity /CaseStudy/ Group discussion/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencementof the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

AECC Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** 2hr 30 mins

Instructions: Paper Setting

- The Question Paper is divided into 4 parts: Part - A Part –B Part-C and Part – D.
- Part – A: Should consist of 10 Questions (Multiple Choice Questions).
- Part – B: Should consist of 6 Questions (Short Answer Questions).
- Part – C: Should consist of 5 Questions (Medium Answer Questions)
- Part – D: Should consist of 3 Questions (Long Answer Questions)

PART – A

1. Answer all the TEN questions. Each Question carries 1 Mark. 10Q X 1M = 10Marks

a.
b.
c.
d.
e.
f.
g.
h.
i.
j.

PART – B

2. Answer any FIVE Questions. Each Question carries 2 Marks. 5Q X 2M = 10 Marks

a.
b.
c.
d.
e.
f.

PART – C

3. Answer any FOUR Questions. Each Question carries 5 Marks. 4Q X 5M = 20 Marks

a.

b.

c.

d.

e.

PART – D

4. Answer any TWO Questions. Each Question carries 10 Marks. 2Q X 10M = 20 Marks

a.

b.

c.

---***---

Mahajana Education Society (R)

Education to Excel

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Affiliated to University of Mysore

Re-Accredited by NAAC with A Grade, College with Potential for Excellence

Department of Environmental Science

Board of Studies Meeting held on 10th September 2022

Sl.No.	Name and address	Designation	Signature
1	Sunitha.M.H HoD, Dept of Environmental Science SBRR Mahajana First Grade College Mysore Contact No: 9663679317 sunithamh15@gmail.com	Chairman	Sunitha MH
2	Dr.N.S.Raju Professor and Chairman Post graduation Department of Environmental Science, Manasagangothri, Mysore Contact No: 9448345959 nsr@envsci.uni-mysore.ac.in	Member	
3	Dr. H.P Shivaraju, M.Sc, Ph.D Assistant Professor and Academic Coordinator Department of Water and Health JSS Academy of Higher Education and Research Sri Shivarathreeshwara Nagara Mysuru-570015, Karnataka, India Contact No: +91-8277102057 shivarajuenvi@gmail.com	Member	10/9/20
4	Saritha HB Assistant Professor in Environmental studies, Amritha School of Arts and Science, Mysore sarithahb@gmail.com	Member	Absent
5	Praphul.G Junior research biologist - Conservation Biology Salim Ali Centre for Ornithology and Natural History, Anaikatty P.O., Coimbatore 641108, Tamil Nadu, India Contact No: 9483902056 Praphulgopal.btr@gmail.com	Member	Praphul.G 10/09/22

Chairperson
BOS/BOE in Environmental Sci
SBRR Mahajana First Grade Co
(Autonomous)
Jayalakshmipuram, Mysuru-57

SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru

Mahajana Education Society (R.)

Education to Excel

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College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF GEOGRAPHY

UG ☑

PG ☐

NEP Syllabi for I and II Semester B.A. Geography

2021-22

DEPARTMENT OF GEOGRAPHY

MOTTO

Down to Earth Awareness

VISION

To make a centre of excellence in Geographic information for a balanced development

MISSION

To spread the awareness of Geographic base and to Develop Geographic consciousness among younger Generations for understanding and creating a healthier Physical and Cultural Environment.

Program Outcomes (POs) for Bachelor of Arts

POs	Details of the Programme Outcomes (POs)
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

List of BoS Members

Sl. No	Category	Name & Designation	Address for Communication	E-mail & Mobile No.
1	Chairperson	**Dr.K.K.Somashekara** Assistant Professor & HoD	Department of Geography SBRR Mahajana FirstGrade College (A), Jayalakshmipuram,Mysuru-12	somashekarkk.fgc@mahajana.edu.in Mobile: 9035456449
2	Member	**Dr. Doddarasaiah. G** Assistant Professor	Department of Geography SBRR Mahajana FirstGrade College (A), Jayalakshmipuram,Mysuru-12	gdurs2014@gmail.com Mob: 8892963344
3	Member	**Siddaraju. C. S** Assistant Professor	Department of Geography SBRR Mahajana FirstGrade College (A), Jayalakshmipuram,Mysuru-12	sidducs1981@gmail.com Mob: 9141481046
4	Nominee bythe Vice Chancellor	**Dr. H. Nagaraj** Professor	Registrar (Evaluation), Karnataka University, Dharwad	Nagarajh66@yahoo.com Mob: 9448939134
5	Experts from OtherUniversity	**Dr. C. Mallanna** Assistant Professor	Department of Geography, KLE Society Lingaraju College (Autonomous) College Road, Belagavi	mallannac@gmail.com Mob: 9480555474
6	Experts from OtherUniversity	**Dr. Srinivas** Assistant Professor	Department of Geography Govt. First Grade College, Vijayanagara, University of Bangalore, Bengaluru	yadavaniseena@gmail.com Mobile: 9845286949
7	Alumnus	**Ms. Sreeja** Assistant Teacher	Excel Public School ,Koorgalli Industrial Area, Belwadi Post, Mysuru, Karnataka 570018	shree-shreeja@yahoo.com Mobile -7204220808
8	One Person from Industry/ Corporate Sector/Allied Area	**Ravi. R.** Global Agency	# 471, D.Subbaiah Road, K.R.Mohalla, Near Ramaswamy Circle, Mysuru-570004	ravi_coop1978@yahoo.com Mobile: 9900143297

Year-wise Structure (NEP 2020): Geography

Discipline Specific Courses (DSC) and Open Elective (OE)

I Year

Course Type, Code and Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		Marks
Geography – I Sem									
DSC(1)	Principles of Geomorphology-211144	4	0	4:0:2	20	20	60	2 $\frac{1}{2}$Hours	150
DSC(1)-Lab	Principles of Geomorphology Practical	0	4		10	15	25	3 Hours	
OE(1)	**(Any one to be opted)** 1.Introduction to Physical Geography 21OEGEO101 2.Fundamentals of Remote sensing 1OEGEO102	3	0	3:0:0	20	20	60	2 $\frac{1}{2}$Hours	100
Geography – II Sem									
DSC(2)	Introduction to Climatology - 211244	4	0	4:0:2	20	20	60	2 $\frac{1}{2}$Hours	150
DSC(2)-Lab	Introduction to Climatology Practical	0	4		10	15	25	3 Hours	
OE(2)	**(Any one to be opted)** 1.Human of Geography 21OEGEO201 2. Basics of Geographic Information Systems 21OEGEO202	3	0	3:0:0	20	20	60	2 $\frac{1}{2}$Hours	100

Syllabus DSC (1) Syllabus for B.A. Geography (Basic and Honors)

Semester I

Course Code: 211144	**Course Title:** Principles of Geomorphology (Theory) Geomorphology (Practical)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 $\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs)

1. Acquire the knowledge of fundamental concepts and the essential principles of Geomorphology.
2. Knowledge of systems and cycles of the solid Earth, crustal mobility and tectonics.
3. Describe the dynamics of Earth related to folds, faults, earthquakes volcanoes and associated landforms.
4. Identify and interpret the evolution of landforms and agents of denudation.

Course Content

Content	Hours
UNIT - 1 Geomorphology	
Introduction to geography: physical and human geography Introduction to Geomorphology: meaning, nature, development, and scope Principles of Geomorphology Geological Time Scale Distribution of continents and oceans	**14**
UNIT – 2 Systems and Cycles of the Solid Earth	
Internal structure of the earth Alfred Wegener's continental drift Theory Theory of Isostacy: Views of Pratt and Airy Convectional current theory and concept of sea floor spreading Theory of Plate Tectonics: plate boundaries, subduction. **Case Studies:** Volcano, Earthquake: reporting of latest incidents	**14**

UNIT – 3 The Dynamics of Earth	
Earth's Movements: Endogenetic and Exogenetic forces, Sudden and Diastrophic movements- Epeirogenetic and Orogenetic Movements-Process of folding and faulting, Vulcanicity and earthquake Rocks: Characteristics, types, importance, and rock cycle Weathering: meaning, types and controlling factors Mass Movement: meaning, controlling factors, types-landslides, rock-falls	**14**
UNIT - 4 Evolution of Landforms	
Evolution of Landforms: meaning, types and factors controlling landforms development Slope development: concept and types Concept of Cycle of Erosion–W.M. Davis and W. Penck Agents of Denudation: river; drainage patterns, groundwater, Sea waves, Wind and Glaciers and resultant landforms. Application of geomorphology: in India and Karnataka (Regional planning, Urban planning and transportation, Mining, Hazard management, Agriculture and Environmental management).	**14**

References

1. Ahmed E. (1985) Geomorphology, Kalyani Publishers, New Delhi.
2. Bloom A.L. (1978) Geomorphology: A Systematic Analysis of Late Cenozoic Landforms Prentice – Hall of India, New Delhi.
3. Brunsden D. (1985) Geomorphology in the Service of Man: The Future of Geography, Methnen, U.K.
4. Chorley, R.J., Schumm, S. A. and Sugden, D.E. 1984: Geomorphology, Methuen,London
5. Cooke, R.U. and Warren, 1973: Geomorphology in Deserts, Batsford, London
6. Dayal, P. 1996: Textbook of Geomorphology, Shukla Book Depot, Patna.
7. Goudar M B, Physical Geography (Kannada Version)
8. Goudie Anrew et.al. (1981) Geomorphological Techniques, George Allen & Unwin, London.
9. Homes A. (1965) Principles of Physical Geology, 3rd Edition, ELBSS Edn.
11. Hugar M R Physical Geography part 1(Kannada Version)

12.Kolhapure and S S Nanjan, Physical Geography (Kannada Version)
13.Nanjannavar S S: Physical Geography (Kannada Version)
14.P Mallappa, Physical Geography (Kannada Version)
15.Ranganath Principles of Physical Geography (Kannada Version)
14.Strahler A.N. (1968) The Earth Sciences, Harper & Row Intl. Edn, New York
16.Thornberry W.D. (1969) Principles of Geomorphology 2nd Edition, Wiley Intl. Edn. & Wiley,1984.
17.Verstappen H. (1983) Applied Geomorphology, Geomorphological Surveys for Environmental Development, Elsevier, Amsterdam

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http://www.moorlandschool.co.uk/earth/tectonic.htm
https://www.usgs.gov/
https://www.ksndmc.org/

DSC (1)-Lab

Geomorphology Practical

Content of Practical Course 1: List of Experiments to be conducted

Exercise-1:

Identification of Rocks and Minerals:

Mineral samples: Iron ore, Bauxite ore and Manganese

Rock Samples: Granite, Basalt, Lime Stones, Sandstone, quartzite and marble

Exercise-2:

Extraction and interpretation of Geomorphic information from Topographical maps

Exercise-3:

Preparation of contour map from toposheet, Construction of Relief Profiles-serial, Super imposed, Projected & Composite.

Exercise-4:

Slope Analysis: Slope Maps (Wentworth method), Slope calculation and conversion (Isotan and Isosin) and aspect maps & Hypsometric curve and integral

Exercise-5:

Drainage Morphometry: Delineation of watershed, stream ordering and Morphometric analysis: mean stream length, drainage density and drainage frequency.

Field Work:

Measurement of channel cross-sections in the field, Geomorphic map of channel bed, Study of erosional and depositional features in the field.

Case Study:

Students must be taken to observe local land formation and degradation and write a report on their effectiveness.

Course Articulation Matrix-211144

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	2	1	2	1	1	2	-	1	1	-	2
CO2	2	1	1	2	1	1	2	-	1	1	-	2
CO3	2	2	1	2	1	1	2	-	1	1	-	2
CO4	2	2	1	-	-	-	2	-	1	1	-	1
Weighted Average	**2**	**1.75**	**1**	**2**	**1**	**1**	**2**	**-**	**1**	**1**	**-**	**1.75**

OE(1) Geography Syllabus for All Programs(Except Arts)

Semester I

Course Code: 21OEGEO101	**Course Title: Introduction to Physical Geography**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):

1. Acquire the knowledge of structure and movement of the earth.
2. Analyze the interior and exterior aspects of earth sciences.
3. Analyze and interpret atmospheric phenomena.
4. Examine and describe the structure, composition and nature of water bodies.

Course Content

UNIT – 1	**10 HOURS**
Origin, Shape and Size of the Earth, Movement of the Earth- Rotation and Revolution, Effects of the movement of Earth, Coordinates -Latitude, Longitude and Time. Structure of the Earth,	
UNIT – 2	**12 HOURS**
Rocks - types, significance, Weathering – types. Agents of Denudation - River, Glacier, Wind and Under Ground water. Volcanicity, Earthquakes and Tsunamis	
UNIT – 3	**10 HOURS**
Structure and Composition of Atmosphere, Weather and Climate. Atmospheric Temperature, Heat Budget of the atmosphere Atmospheric Pressure, Winds and Precipitation	
UNIT – 4	**10 HOURS**
Distribution of Land and Sea, Submarine Relief of the Ocean, Temperature and salinity of Sea Water. Ocean Tides, Waves and Deposits, Ocean currents - Atlantic, Pacific and Indian Oceans. Marine Resources: Biotic, mineral and energy resources	

References

1. B.S. Negi (1993) Physical Geography. S.J. Publication, Meerut
2. D.S. Lal (1998) Climatology. Chaitnya publishing house, Allahabad
3. K. Siddhartha (2001) Atmosphere, Weather and Climate. Kisalaya publication, New Delhi

4. R.N. Tikka (2002) Physical Geography. Kedarnath Ramnath & co, Meerut.

5. Willian D. Thornbury (1997) Principle of Geomorphology. New Age,International (Pvt.Ltd.) New Delhi.

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1. http://www.physicalgeography.net
2. https://www.geography.com
3. https://libguides.tru.ca › physicalgeography › websites
4. https://www.nationalgeographic.org › activity › reason
5. https://www.gale.com › physical-geography

Course Articulation Matrix- 21OEGEO101

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	-	1	2	2	3	1	2	1	-	3
CO2	3	2	2	2	2	2	3	2	2	2	2	3
CO3	3	2	1	1	1	2	3	2	1	1	-	3
CO4	3	2	1	1	-	2	3	2	1	1	-	3
Weighted Average	**3.66**	**2.33**	**1.33**	**1.25**	**1.66**	**2**	**3**	**2.33**	**1.5**	**1.25**	**2**	**3**

OE(1) Geography Syllabus for All Programs(Except Arts)

Semester I

Course Code: 21OEGEO102	**Course Title: Fundamentals of Remote Sensing**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes:

1. Demonstrate the basic concepts and impart necessary skills of remote sensing
2. Analyze sensing and recording reflected or emitted energy and processing it.
3. Analyze and interpret remotely sensed satellite images on the Earth surface.
4. Comprehend the concepts of Remote sensing and describe its practical significance.

Course Content

UNIT - 1 Introduction	**10 HOURS**
Definition of Remote Sensing, developmental stages, Laws of Physics, electromagnetic waves, spectrum, regions, wavelength, frequencies, and applications. Types-Satellites, Sensors, Payloads, Orbits, telemetry of satellites.	

UNIT - 2 Process and types of Remote Sensing	**10 HOURS**
Process of remote sensing, interaction of radiation with atmosphere and targets, atmospheric noises, attenuation in radiance, resolutions of remote sensing, optical remote sensing, visible region of the spectrum, thermal remote sensing, micro wave remote sensing, Hyper spectral remote sensing, LiDAR, and other remote sensing Platforms.	

UNIT - 3 Image Classification and Interpretation	**10 HOURS**
Satellite products and its spectral characteristics, composite images, band ratios; Land use land cover classification schemes-Anderson and NRSC;Visual image interpretation, elements, stages of interpretation and interpretation keys. Image classification- supervised, unsupervised, and principal component analysis (PCA) and accuracy assessment.	

UNIT – 4 Applications of Remote Sensing	12 HOURS
Disaster Management, Meteorological Studies, Agricultural and Irrigation Studies, Forestry Studies, Hydrological Studies, Natural Resource, Oceanic and Coastal mapping, Soil resource mapping, Urban and Rural Mapping and Management.	

Reference

1. Image processing and GIS for remote sensing: techniques and applications; Second Edition (2016) - Liu, Jian-Guo, Mason, Philippa J
2. Introduction to Remote Sensing and Image Interpretation (2003); Lillesand T.M. Introduction to Remote Sensing, Fifth Edition (2011); James B. Campbell, Randolph H.Wynne
3. Introductory Digital Image Processing: A Remote Sensing Perspective, Fourth Edition(2015) - John R. Jensen
4. Practical handbook of remote sensing, First Edition (2016) - Lavender, Andrew, Lavender, Samantha
5. Remote Sensing and GIS, Second Edition (2011), Bhatta, B.
6. Remote sensing and image interpretation (2015); Chipman, Jonathan W., Kiefer, Ralph W., Lillesand
7. Remote Sensing of the Environment: An Earth Resource Perspective (Prentice HallSeries in Geographic Information Science) - Second Edition (2006), John Jensen

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1. https://onlinecourses.nptel.ac.in/noc19_ce41/preview
2. http://www.rsi.ca
3. http://www.earthsat.com
4. http://www.cr.usgs.gov
5. http://edc.usgs.gov/

Course Articulation Matrix- 21OEGEO102

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	2	3	2	2	2	2	2	2	3
CO2	2	2	3	2	2	2	3	-	1	1	1	2
CO3	2	2	2	2	2	1	2	-	1	1	1	2
CO4	3	2	3	2	2	2	3	1	2	1	2	3
Weighted Average	**2.25**	**2.25**	**2.75**	**2**	**2.25**	**2.33**	**2.50**	**1.5**	**1.5**	**1.25**	**1.5**	**2.5**

Scheme of Valuation for Practical Examination-I Semester

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 isthe semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:Part-A Practical Exercises (C1): 10 marks
- Part-B Practical Exercises (C2): 10 marks + Record: 05 marks = 15 marks
- The student is evaluated for 25 marks in C3 as per the following scheme:

Identification of Minerals and rocks	04 marks
Extraction and Interpretation of Topographical maps	04 marks
Preparation of Contour maps from toposheet	04 marks
Slope Analysis	04 marks
Drainage Morphometry	04 marks
Field work /Case study assessment (Viva)	05 marks
Total	**25 marks**

Syllabus DSC (2) Syllabus for B.A. Geography (Basic and Honors)

Semester II

Course Code: 211244	**Course Title:** Introduction to Climatology (Theory) Climatology (Practical)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 $\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

1. Acquire the knowledge of climatology, structure and composition of atmosphere.
2. Analyze the dynamics of the Earth's atmospheric phenomena
3. Understand the nature and impact of the atmospheric pressure and winds.
4. Determine & describe the atmospheric cycle and factors associated with atmospheric changes.

Course Content:

Content	Hours
UNIT – 1 Composition and Structure of the Atmosphere	**14**
Nature and Scope of Climatology, Atmospheric Sciences; Climatology and Meteorology Origin and structure of the Atmosphere: Troposphere, Stratosphere, Mesosphere, Ionosphere, Exosphere and their characteristics. Composition of the atmosphere Weather and Climate.	
UNIT – 2 Atmospheric Temperature	**14**
Isolation: Definition, Mechanism, Solar Constant.Factors affecting the Insolation: Angle of incidence, length of the day, Sunspots, Distance between the earth and the sun, effect of the atmosphere. Heating and cooling process of the atmosphere-Radiation, Conduction, convection, and advection. **Temperature**: meaning and Influencing Factors on the Distribution of Temperature Distribution of the temperature: Vertical, Horizontal, and Inversion of temperature. Global Energy Budget: Incoming shortwave solar radiation, Outgoing Long wave **Terrestrial radiation, Albedo. Net Radiation and Latitudinal Heat Balances.**	

UNIT – 3 Atmospheric Pressure and Winds	14
Atmospheric Pressure: Influencing factors on atmospheric pressure. Vertical and Horizontal Distribution of the atmospheric pressure and Pressure Belts, Pressure Gradient. Tri-cellular-Hadley, Ferrell's and Polar Cells. Winds: influencing factors, Types - planetary, seasonal, local wind Variable winds-Cyclones and anti-cyclones. Air-Masses and Fronts: Definition, Nature, Source Regions, Classification.	
Unit – 4 Atmospheric Moisture	**14**
Humidity: Sources, influencing factors and types-Absolute, Relative and Specific. Hydrological cycle: process of evaporation, condensation. Clouds and its types Precipitation and its forms. **Climate Change: Causes and consequences, recent issues-floods, drought,**	

References

1. Lal, D. S. (1998). Climatology. Allahabad: Chaitanya Publishing House.
2. P Mallappa, Physical Geography (Kannada Version)
3. Ranganath Principles of Physical Geography (Kannada Version)
4. Nanjannavar S S: Physical Geography (Kannada Version)
5. Hugar M R Physical Geography part 1(Kannada Version)
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8. Lutgens, Frederic K. & Tarbuck, Edward J. (2010). The Atmosphere: An Introductionto Meteorology. New Jersey: Pearson Prentice Hall.
9. Oliver, John E. & Hidore, John J. (2003). Climatology: An Atmospheric Science.Delhi: Pearson Education.
10. Singh, S. (2005). Climatology. Allahabad: Prayag Pustak Bhawan.
11. Barry, R.G. and Chorley, R.J. (2003): Atmosphere, Weather and Climate; Psychology Press, Hove; East Sussex.
12. Critchfield, H.J., (1975): general Climatology, Prentice Hall, New Jersey.
13. Mather,J.R.(1974): Climatology: Fundamentals and Applications; Mc Craw Hill BookCo., U.S.A.
14. Rumney, G.R. (1968): Climatology and the World Climates, Macmillan, London.
15. Trewartha, G.T. (1980): An Introduction to Climate; McGraw Hill, New York, 5thedition, (International Student Edition)

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1. https://earthobservatory.nasa.gov/
2. https://mausam.imd.gov.in/
3. https://www.weatheronline.in/
4. https://earthexplorer.usgs.gov/
5. https://www.nhc.noaa.gov/satellite.php

DSC(2)-LAB

Climatology Practical

Content of Practical Course 1: List of Experiments to be conducted

Conduct all exercises with Goal, Procedure, devices, and findings.

Exercise 1: Understanding Structure and functions of the Indian Meteorological Department (IMD).

Exercise 2: Collection of climatic data from IMD website- https://mausam.imd.gov.in/bengaluru/.

Exercise 3: Plotting of downloaded climatic data using graphical methods-Elementary Instrumental Observation:

Exercise 4: Centigrade and Fahrenheit thermometer for measuring temperature.

Exercise 5: Mercurial Barometer and Aneroid Barometer for measuring atmospheric Pressure

Exercise 6: Wind Vane and cup-anemometer.

Exercise 7: Wet and Dry bulb thermometer for measuring humidity

Exercise 8: Rainguage- Dial type for measuring rainfall Exercise 3: Rainfall Trend Analysis.

Exercise 9: Interpretation of Indian Daily Weather charts.

Exercise 10: Deriving water balance chart, Actual and potential evapotranspiration

Note: Students are expected to download weather charts of the four seasons.

Course Articulation Matrix - 211244

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	-	1	2	3	1	-	1	-	2
CO2	2	2	1	-	1	2	3	1	-	1	-	2
CO3	3	2	1	1	2	2	3	1	1	1	-	2
CO4	2	2	1	1	1	2	2	1	1	1	-	2
Weighted Average	**2.25**	**2**	**1**	**1**	**1.25**	**2**	**2.75**	**1**	**1**	**1**	**-**	**2**

OE(2) Geography Syllabus for All Programs(Except Arts)

Semester II

Course Code: 21OEGEO201	**Course Title: Introduction to Human Geography**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):

1. Comprehend the evolution, approaches and development of Human Geography.
2. Understand the geographical analysis of population dynamics and migration.
3. Determine and introspect the concept of culture, cultural diffusion, factors, pattern and process of realm.
4. Analyze and describe the Economic activities and human settlements.

Course Content

UNIT - 1 Introduction to Human Geography	**10 HOURS**
Nature and scope, Development Environmental Determinism and Possiblism, Neo determinism (stop and go-determinism) Approaches to human geography: Exploration and Descriptive approach, regional analysis Approach, Areal Differentiation Approach, Spatial organization Approach. Modern approaches: Welfare or Humanistic Approach, Radical Approach, Behavioral Approach, Post Modernism in geography Fields and sub fields in Human geography	

UNIT - 2 Geographical Analysis of Population	**10 HOURS**
Distribution and Growth of Population Density of population: meaning and Types: Arithmetic Density and Physiological Density. Regional distribution of Density of Population. Population Movement: Migration, Raventein's Law of Migration, Factors of population Migration, Economic Push and Pull factors, Cultural Push and Pull Factors, Environmental Push and Pull Factors. Migration Types: Immigration and Emigration, Internal and International Migration	

UNIT - 3 Cultural Patterns and Processes **10 HOURS**

Concept of Culture, Material and Non material culture

Cultural Regions, cultural Traits and Complexes, cultural Hearths, cultural Diffusion.

Languages of the World: Types, Classification and Distribution.

Religions: Types and Classification. Distribution.

Universalizing Religions: Christianity, Islam, Buddhism. Ethnic Religions: Hinduism, the Chinese religion, Shintoism, Judaism.

The Major tribal population of the world.

UNIT –4.Human Economic Activities, Development and Settlements **12 HOURS**

Primary Economic Activities – Agriculture, Types: Primitive Subsistence, Intensive subsistence, Plantation Agriculture, Extensive Commercial grain cultivation, Mixed Farming, Dairy Farming

Secondary Activities: Manufacturing, classification – based on size – Small Scale and Large scale. Based on Raw material – Argo-based, Mineral based, Chemical Based and Forest based. Industrial Regions of the world.

Tertiary Activities: Types: Trade and commerce, Retail Trading services, Wholesale trading. Transport and communications: Factors, communication services – Telecommunication.

Services: Informal and Non formal sector. Information technology and service.

Human Settlements: Factors, Classification, Types and Patterns: Rural, Urban. Compact or Nucleated and Dispersed settlements. Rural settlement Patterns: linear, rectangular, circular, star shaped, T shaped.

References

1. Hartshorne, T. A., & Alexander, J. W. (2010). Economic Geography. New Delhi: PHI Learning.
2. .Knox, P., Agnew, J., & McCarthy, L. (2008). The Geography of the World Economy. London: Hodder Arnold.
3. .Lloyd, P., & Dicken, B. (1972). Location in Space: A Theoretical Approach to Economic Geography. New York: Harper and Row.
4. Siddhartha, K. (2000). Economic Geography: Theories, Process and Patterns, NewDelhi: Kisalaya Publications.
5. Smith, D. M. (1971). Industrial Location: An Economic Geographical Analysis, NewYork: John Wiley and Sons.

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1.https://open.umn.edu ›

2.https://sccollege.edu ›

3.https://web.ung.edu ›

4.https://oer.galileo.usg.edu ›

5.https://geography.wisc.edu ›

6.https://www.pdfdrive.com ›

7.https://old.amu.ac.in ›

Course Articulation Matrix- 21OEGEO201

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	-	1	2	1	-	-	-	2
CO2	2	2	1	1	1	2	2	2	1	1	2	2
CO3	2	2	1	1	-	2	2	1	-	-	1	3
CO4	3	2	2	1	-	2	2	2	1	1	1	3
Weighted Average	**2.25**	**1.75**	**1.25**	**1**	**1**	**1.75**	**2**	**1.5**	**1**	**1**	**1.33**	**2.5**

OE(2) Geography Syllabus for All Programs(Except Arts)

Course Code: 21OEGEO202	**Course Title: Basics of Geographic Information Systems (GIS)**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes:

1. Acquiring the knowledge of concept development components and functions of GIS
2. Analyze the theoretical concepts in a practical way through the mathematical models of geography.
3. Understand the various modes of data collection and scale.
4. Solve geographical problems through the preparation of thematic maps.

Course Content

UNIT - 1 Introduction	**10 HOURS**
Emergence of GI Science, Milestone and Developmental stages in GIS, Definition, scope,role of GIS in digital world; Components, functionalities, merits and demerits, global market, interdisciplinary domains, and its integration with GIS.	
UNIT - 2 Geodesy and Spatial Mathematics	**10 HOURS**
Cartesian coordinates, latitude, longitudes, formats of angular units, geographical coordinates, Datum: WGS84, vs NAD32. UTM, Aerial Distance measurement using Geographic and projected coordinates, Area, Perimeter, length by coordinates and various international measures.	
UNIT - 3 GIS Data and Scale	**10 HOURS**
Spatial Data and its structures; sources and types of data collection; data errors, topology of data and relationship. Large Scale vs Small Scale, generalization; precision and accuracy of data-logical consistency and non-spatial data integration	
UNIT –4. Geo processing and Visualization	**12 HOURS**
Spatial and Non-Spatial Queries, proximity analysis, Preparation of Terrain and Surface models. Hotspot and density mapping. Types of maps, thematic maps and Its types, relief maps, flow maps and cartograms. Tabulations: Graphs and Pivot tables	

References

1. An Introduction to Geographical Information Systems - Ian Heywood (2011)
2. Geographic Information Systems and Cartographic Modelling - Tomlin, C.D. (1990)
3. Geographic Information Systems and Environmental Modelling - Clarke, C., K. (2002)
4. Geographic Information Systems and Science - Paul A. Longley, et. al. (2015)
5. Geographic Information Systems: A Management Perspective - Aronoff, S. (1989)
6 GIS - Fundamentals, Applications, and Implementations - Elangovan, K. (2006)
7. Introduction to Geographical Information Systems - Chang, Kang-Tsung (2015)
8. Mathematical Modeling in Geographical Information System, Global Positioning System and
9. Digital Cartography - Sharma, H.S. (2006)
10. Remote Sensing and GIS - Bhatta, B. (2011)
11 Spatial analysis and Location-Allocation Models - Ghosh, A. and G. Rushton (1987)

Reference Websites

1. IIRS MOOC programme: https://isat.iirs.gov.in/mooc.php
2. ITC Netherlands, Principles of GIS
3. https://webapps.itc.utwente.nl/librarywww/papers_2009/general/principlesgis.pdf
4. Geographical Information Systems: Principles, Techniques, Management and Applications
5..https://www.geos.ed.ac.uk/~gisteac/gis_book_abridged/

Course Articulation Matrix- 21OEGEO202

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	2	3	2	2	1	2	1	2	3
CO2	2	2	2	2	3	2	2	1	1	1	2	2
CO3	2	2	2	2	2	1	2	1	1	1	2	3
CO4	2	2	3	2	3	2	3	1	2	1	2	3
Weighted Average	**2**	**2**	**2.5**	**2**	**2.75**	**1.75**	**2.25**	**1**	**1.5**	**1**	**2**	**2.75**

Continuous Formative Evaluation Internal Assessment/Exams
I & II Semester

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester end Theory Examinations respectively and 50:50 for IA and Semesterend Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the courses and within 45 working days of semester program

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc.

This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc, required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment /project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course Shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	10	10	20
Seminar/Presentation/Assignment/Activity	10		10
Case Study/Field Work/Project Work/Quiz etc.		10	10
Total	**20**	**20**	**40**

- For practical course of full credits, seminar shall not be compulsory. In its place, marks

  shall be awarded for Practical Record Maintenance (the ratio is 25 (10 + 15):25).

- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2

  component as decided by the college and concerned department/teacher.

- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencementof the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

J Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations-I&II Semester

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 isthe semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

Part-A Practical Exercises (C1): 10 marks

Part-B Practical Exercises (C2): 10 marks + Record: 05 marks = 15 marks

The student is evaluated for 25 marks in C3 as per the following scheme:

Assessment Criteria	Marks
Indian Meteorological Department (IMD) Maps	04
Meteorological Instruments	04
Precipitation measuring Maps	04
Indian Weather Maps	04
Water Balance & Evapotranspiration Charts	09
Total	**25**

DSC Theory and OE Question Paper Pattern

B.A GEOGRAPHY (For I and II Semester) 2022 Onwards

Exam Duration: $2\frac{1}{2}$ Hours **Max. Marks: 60**

Part-A

I. Answer any Four of the following questions. **4X3=12**

1)……

2)……

3)……

4)……

5)……

6)……

Part-B

II. Answer any Three of the following questions. **3X6=18**

7)……..

8)……..

9)…….

10)……

11)……

Part –C

III. Answer any Three of the following questions. **3X10=30**

12)……

13)……

14)……

15)……

DSC Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** $2\frac{1}{2}$ Hours

Instructions: Paper Setting
The Theory exam shall be conducted for 60 Marks and it consists of 3 Sections namely

- The Question Paper is divided into 3 parts: Part – A, Part – B and Part- C
- Section A, Section B, Section C with internal choices. (Short, Medium and Long answer questions).
- Section A - Each question carries 3 marks and student has to answer 4 out of 6 questions.
- Section B - Each question carries 6 marks and student has to answer 3 out of 5 questions, and
- Section C - Each question carries 10 marks and student has to answer 3 out of 4 questions.

Open Elective Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** $\mathbf{2\frac{1}{2}}$ Hours

Instructions: Paper Setting
The Theory exam shall be conducted for 60 Marks and it consists of 3 Sections namely

- The Question Paper is divided into 3 parts: Part – A, Part – B and Part- C
- Section A, Section B, Section C with internal choices. (Short, Medium and Long answer questions).
- Section A - Each question carries 3 marks and student has to answer 4 out of 6 questions.
- Section B - Each question carries 6 marks and student has to answer 3 out of 5 questions, and
- Section C - Each question carries 10 marks and student has to answer 3 out of 4 questions.

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NEP Syllabi for III and IV Semester B.A. Geography

2022-23

DEPARTMENT OF GEOGRAPHY

MOTTO

Down to Earth Awareness

VISION

To make a centre of excellence in Geographic information for
a balanced development

MISSION

To spread the awareness of Geographic base and to Develop Geographic consciousness among younger Generations for understanding and creating a healthier Physical and Cultural Environment.

Program Outcomes (POs) for Bachelor of Arts

POs	Details of the Programme Outcomes (POs)
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

List of BoS Members

Sl. No.	Category	Name & Designation	Address for Communication	E-mail & Mobile No.
1	Chairperson	**Dr.K.K.Somashekara** Assistant Professor& HoD	Department of Geography SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru – 12	somashekarkk.fgc@mahajana.edu.in 9035456449
2	Member	**Dr. Doddarasaiah. G** Assistant Professor	Department of Geography SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	gdurs2014@gmail.com, Mobile: 8892963344
3	Member	**Siddaraju. C. S** Assistant Professor	Department of Geography SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	sidducs1981@gmail.com, Mobile: 9141481046
4	Nominee by the Vice Chancellor	**Dr. B.Chandrashekara** Professor & BOS Chairman	Department of studies in Geography, Manasagangothri University of Mysore, Mysc	chandrubuom@gmail.com, Mob: 9448912063
5	Experts from Other University	**Dr. Srinivas** Associate Professor	Department of Geography Govt. First Grade College, Vijayanagara University of Bangalore Bengaluru	yadavaniseena@gmail.com, Mob: 9845286949
6	Experts from Other University	**Dr.Amarendra. K.N Associate Professor**	HoD, Department of Geography Sri Siddaganga First Grade College Nelamangala Rural, Bangalore University	knamarnath2010@gmail.com, Mobile: 9008046170
7	Alumnus	**Ms. Sreeja** Assistant Teacher	Excel Public School ,Koorgalli Industrial Area, Belwadi Post, Mysuru, Karnataka 570018	shree- shreeja@yahoo.com Mobile -7204220808
8	One Person from Industry/ Corporate Sector/Allied Area	**Ravi. R.** Global Agency	# 471, D.Subbaiah Road, K.R.Mohalla, Near Ramaswamy Circle, Mysuru-570004	ravi_coop1978@yahoo.com Mobile: 9900143297

Year-wise Structure (NEP 2020): Geography

Discipline Specific Courses (DSC) and Open Elective (OE)

II Year

Course Type, Code and Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L: T:P	C1	C2	C3		Marks
Geography – III Sem									
DSC(3)	Fundamentals of Human Geography -221344	4	0	4:0:2	20	20	60	2 $\frac{1}{2}$Hours	150
DSC(3)-Lab	Fundamental Techniques in Human Geography	0	4		10	15	25	3 Hours	
OE(3)	**(Any one to be opted)** 1. Geography of India 22OEGEO301 2. Application of GIS and Remote sensing 22OEGEO302	3	0	3:0:0	20	20	60	2 $\frac{1}{2}$Hours	100
Geography – IV Sem									
DSC(4)	India: Resources and Sustainability-221444	4	0	4:0:2	20	20	60	2 $\frac{1}{2}$Hours	150
DSC(4)-Lab	Representation of Indian Geographical features and resources.	0	4		10	15	25	3 Hours	
OE(4)	**(Any one to be opted)** 1. Geography of Karnataka 22OEGEO401 2. Population and settlement Geography 22OEGEO402	3	0	3:0:0	20	20	60	2 $\frac{1}{2}$Hours	100

Syllabus DSC(3) Syllabus for B.A. Geography (Basic and Honors)

Semester III

Course Code: 221344	**Course Title:** Fundamentals of Human Geography (Theory) Fundamental Techniques in Human Geography (Practical)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 $\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs)

1. Associate and describe the basic concepts related to the History and evolution of Human Geography.
2. Interpret the concept of culture and cultural diffusion in the realm of Geography.
3. Analyze and describe the dynamics of geographical population and migration.
4. Analyze and demonstrate the nature of economic activities and human settlements.

Course Content

Content	Hours
UNIT - 1 Introduction to Human Geography	
1.1 Nature and scope, Development and Branches of Human Geography, 1.2 Themes in Geography: Location, Place, Human-Environment Interaction, Movement and Region. 1.3 Man- Environment Relation: Environmental Determinism and Possiblism, Neo- Determinism (stop and go determinism) 1.4 Approaches to Human geography: Exploration and Descriptive Approach, Regional Approach, Areal Differentiation Approach, Spatial organization Approach. Modern Approaches: Welfare or Humanistic Approach, Radical Approach, Behavioral Approach, Post Modernism in geography.	**14**
UNIT – 2 Cultural patterns and Processes	
2.1 Concept of culture, Material and Non-Material Culture, Cultural traits and Cultural regions. 2.2 Meaning and Definition of races, Classification of races, Main characteristics (traits) and Broad racial groups of the world and their distribution. 2.3 Languages: Classification and Distribution of languages. 2.4 Religion: Types, Classification and Distribution of religions: Hinduism, Christianity, Islam and Buddhism. **Assignment:** Each student is expected to prepare a brief report on the cultural composition of their own locality/ place/ village/ ward/town or neighborhoods through field Investigation and also can use published data.	**14**

UNIT – 3 Population and Settlements	
3.1 Distribution and Growth of Population; Factors affecting population Distribution. 3.2 Density of Population: Meaning and Types; Arithmetic Density, Physiological Density and Agricultural density, Regional Distribution of Density of Population; Carrying capacity and Sustainability 3.3 Concept of Settlements, Origin and evolution of Human settlements, Factors of settlements, origin and distribution, types and pattern of settlements, 3.4 Rural and Urban settlements, Trends and Patterns of World Urbanization. **Field Activity:** Students should study and identify the factors influencing on the origin and growth of the settlement and each student is expected to identify patterns of settlements by visiting nearest settlement. The students are advised to carry topographical map of the place during field visit.	**14**
UNIT - 4 Economic Activities	
4.1 Concept and Classification of Economic activities; Factors affecting Economic Activities. 4.2 Primary Economic Activities – Agriculture, Types: Primitive Subsistence, Intensive Subsistence, Plantation Agriculture, Extensive Commercial grain Cultivation, Mixed Farming, Dairy Farming. 4.3 Secondary Activities: Manufacturing, Classification – a. Based on size – Small Scale and Large scale. b. Based on Raw Material – Agro-based, Mineral based, Chemical Based and Forest based. 4.3.1. Industrial Regions of the world. 4.4 Tertiary Activities: Types: Trade and Commerce, Retail Trading Services, Wholesale Trading. Transport and communications: Factors. Communication Services – Telecommunication Services: Informal and Non formal sector. Information technology and service. **Case Study:** Students have to visit a village/a town nearby and observe the economic activities and understand different classes and identify the most dominant economic activities.	**14**

References:

1) De Blij H. J.Alexander B Murphy, Erin H Fouberg, (2006) Human Geography: people, Place and culture, Abe books Published by Wiley ISBN 10: 0471679518 / ISBN 13: 9780471679516
2) Sarah Bendarz, Mark Bockenhauer, Fredrik Hiebert, 2020, Human Geography: A Spatial Perspective; National Geographic School Pub Inc.
3) Majid Hussein 2018 Human Geography, Rawat Publication (Fifth Edition)
4) David Dorrell, Josesph Henderson, Todd Lindley and Georgeta Cannor (2019) Introduction to Human Geography, University System of Georgia
5) Hartshorne,T.A., & Alexander,J.W.(2010).Economic Geography. New Delhi: PHI Learning.
6) Nellson, Gabler Vining (1995) Human Geography, People, Cultures and Landscapes
7) Ranganath (2002) Principles of Human Geography (Kannada Version) Vidyanidhi, Gadag

8) Rubenstein J.M (2016). An Introduction to Human Geography, Macmillan Publishing Company, New York
9) Siddhartha,K.(2000).Economic Geography: Theories, Process and Patterns, New Delhi: Kisalaya Publications.
10) Smith,D.M.(1971).Industrial Location: An Economic Geographical Analysis, New York: John Wiley and Sons.

Webiste links:

1) A P Human Geography
2) https://ung.edu/university-press/books/introduction-to-human-geography.php
3) https://www.thoughtco.com
4) https://ncert.nic.in
5) https://vedantu.com

DSC (3)-Lab

Fundamental Techniques in Human Geography Practical

Content of the Practical Course		Hours
Exercise 1	**Maps:** Definition, Elements of map: scale, direction, map projection, conventional signs and symbols, legend, Types of map: **1. Based on scale**: A. large scale: cadastral maps, Topographic maps, B. Small scale: wall maps, atlas maps, maps 2. **Based on purpose and content**: Physical Maps, Political Maps, Thematic Maps. Uses of Maps.	08
Exercise 2	**Map Scales:** Definition of Scale, Methods of representing Scales: Statement Method, Graphical Method, Ratio Method (R F).	08
Exercise 3	**Conversion of Scale**: Verbal to RF, RF to Verbal, Verbal to Graphical. Exercises on Measuring Distances on Map and converting map distance to ground distance.	08
Exercise 4 and 5	**Map Projections:** Meaning and Purpose, Latitudes and Longitudes, Classification of Map Projections and their general properties: Conical Projections, Cylindrical Projections, Zenithal Projections. UTM Projections. Choice of Map Projection.	08
Exercise 6	Drawing of conical projection with One Std. Parallel and Two Std. Parallels,	08
Exercise 7	Drawing of Cylindrical Equal Area Projection.	06
Exercise 8	Drawing of Zenithal Polar Gnomonic Projection.	06
Exercise 9	Introduction to UTM Projection, uses and importance.	04

References:

1. Dr.L.R.Singh (2010), Fundamentals Of Practical Geography, Sharda Pustak Bhavan, Allahabad, India.
2. Pijushkanti Saha, Partha Basu (2013) Advanced Practical Geography
3. Ashis Sarkar (2015) Practical Geography: A Systematic Approach, Orient Black swan Pvt Ltd.
4. Rana Pb Singh Rl Singh (2018), Elements of Practical Geography. Kalyani Publishers
5. Dent B.D., 1999. Cartography: Thematic Map Design, (Vol. 1), McGraw Hill
6. Gupta K.K and Tyagi V.C., 1992. Working with Maps, Survey of India, DST, New Delhi.
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8. Monk house, F.J. and Wilkinson, H.R., 1971. Maps and Diagrams. Methuen and Co. Ltd., London. K.
9. Singh, R.L., 2005. Elements of Practical Geography. Kalyani Publishers, New Delhi. India.

Course Articulation Matrix-221344

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12
CO1	2	2	2	1	-	2	2	1	-	-	-	2
CO2	2	2	1	1	-	2	2	1	1	-	-	2
CO3	2	2	1	1	-	2	2	1	1	-	-	2
CO4	2	2	1	1	-	1	2	1	1	-	-	2
Weighted Average	**2**	**2**	**1.25**	**1**	**-**	**1.75**	**2**	**1**	**1**	**-**	**-**	**2**

OE(3) Geography Syllabus for All Programs(Except Arts)

Semester III

Course Code: 22OEGEO301	**Course Title: Geography of India**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):

1. Acquire the knowledge of location, relief features, climate and vegetation of India.
2. Examine and interrelate the Irrigation and Agricultural systems in India.
3. Analyze the nature and challenges associated with natural resources and Industries in Indian context.
4. Describe the modes of transport and communication and analyze the dynamics of Human Population.

Course Content

UNIT - 1 Physical Basis	**12 HOURS**

1.1 Location, Size and Extent, Political Divisions

1.2 Relief Features-Northern Mountains, Northern Great Plain,The Peninsular Plateau and Coastal Plain and Islands

1.3 Climate: Seasons – Summer Season, South-West Monsoon, Retreating Monsoon Season, Winter Season,

1.4 Drainage system- Rivers of North India, Rivers of South India,

1.5 Vegetation - Types and Distribution- Afforestation programs

UNIT - 2 Irrigation and Agriculture	**10 HOURS**

2.1 Irrigation: Need for Irrigation and Types

2.2 Soils- Types and Distribution, Issues and conservation

2.3Irrigation: Need for Irrigation and Types

2.4Agriculture: Significance and Types- Intensive and Extensive Farming, Subsistence and Mixed Farming

2.5Major Crops- Production and Distribution: Rice, Wheat, Cotton , Sugar cane and Tea, Development of Agriculture- Green Revolution

UNIT - 3 Minerals, Power and Industries	10 HOURS

3.1Mineral and Power Resources-Types and Significance
3.2Production and Distribution: Iron Ore, Manganese
3.3Production and Distribution: Coal, Petroleum, Hydro Electricity
3.4Major industries- Iron and Steel, Cotton textile, Sugar.
3.5Major industrial regions of India
3.6Special Economic Zones

UNIT – 4 Transport, Communication and Human Population	10 HOURS

4.1Roadways, Railways, Airways and Waterways.
4.2Important Ports: Calcutta, Chennai, Mumbai and New Mangalore.
4.3Indian Space Programme (Indian Communication Satellites)
4.4Growth of Population
4.5Distribution and Density of Population
4.6Population Composition – Sex Ratio, Literacy
4.7Population Issues

References:

1.Gopal Singh : Geography of India, Atmarama and Sons, New Delhi.
2.Hussain M,2014, Geography of India, Tata McGraw-Hill Education- New Delhi
3.ICAR: Cropping pattern in India,1974.
4.Mathur,S.M.: Physical Geology of India, NBT1991.
5.Ranganath : Regional and economic Geography of India (Kan.Ver) VidyanidhiPrakashana, Gadag,2020.
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2. https://agricoop.nic.in/en
3. https://www.resourcedata.org/dataset/rgi-ministry-of-minerals-energy-and-water-resources
4. https://dpiit.gov.in/
5. http://rfrfoundation.org/nadi-ko-jano/
6. https://jalshakti-ddws.gov.in/
7. ISRO WEBSITE……..

Course Articulation Matrix-22OEGEO301

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	2	2	3	1	1	1	1	3
CO2	3	2	1	1	2	2	3	1	-	-	1	3
CO3	2	2	1	1	1	2	3	1	-	-	1	3
CO4	2	2	1	1	1	2	3	1	1	-	1	3
Weighted Average	**2.5**	**2**	**1.25**	**1.25**	**1.5**	**2**	**3**	**1**	**1**	**1**	**1**	**3**

OE(3) Geography Syllabus for All Programs(Except Arts)

Semester III

Course Code: 22OEGEO302	**Course Title: Application of GIS and Remote sensing**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):

1. Describe the basic concepts associated with the evolution of remote sensing.
2. Analyze the factors of remote sensing and their application in different areas.
3. Interpret the concepts, components and data structures in GIS.
4. Examine and describe the nature of Data analysis and its application in the context of GIS.

Course Content

UNIT – 1	**12 HOURS**
Remote Sensing; Concept, Definition, Evolution of Remote Sensing, Process of Remote sensing, EMR; Wave length, Frequency, Electromagnetic Spectrum; Bands, Atmospheric window, Interaction of EMR with atmosphere and surface. Spectral signature.	
UNIT – 2	**10 HOURS**
Remote Sensing Platforms, Orbit, Active and Passive Remote Sensing, Indian remote sensing satellites and launch vehicle's, Application of Remote Sensing in Agriculture, Disaster management, Urban studies, Coastal management and EIA.	
UNIT – 3	**10 HOURS**
Geographic information System; Definition, Development of GIS, Components of GIS, Data types; Spatial and Non-spatial data, Raster and Vector data models, Data Sources, errors, Data input methods; Manual and Automated.	
UNIT – 4	**10 HOURS**
Data Analysis; Buffer Analysis and its applications, Overlay functions, Query, Network Analysis, GIS Applications in urban monitoring & planning, Disaster Mitigation, Forestry, Wetland monitoring.	

References:

1.Lilles and Thomas M. & Kiefer Ralph: Remote Sensing and Image Interpretation Third Edition John Wiley

2.Campbell John B.: Introduction to Remote Sensing Taylor &Francis

3.Floyd F. Sabins : Remote Sensing and Principles and Image Interpretation

4.Manual of Remote Sensing: American Society of Photogrammetry and Remote Sensing.

5.George Joseph: Fundamentals of Remote Sensing; Universities Press India Pvt Ltd, Hyderabad, India

6.Editors: John D. Bossler; John R. Jensen; Robert B. McMaster; Chris Rizos, 2001. Manual of Geospatial Science and Technology, November 2001, Vol 1 Part 1andII.

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12.Ian Heywood, Sarah Cornelius and Steve Carver (2010). An introduction to geographical information systems. Prentice Hall - Pearson Education limited.
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15.The ESRI Guide to GIS Analysis, by Andy Mitchell, ESRI Press, 1999, 188 pp.

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1. https://neo.sci.gsfc.nasa.gov/
2. https://earthexplorer.usgs.gov/ Satellite
3. https://scihub.copernicus.eu/
4. https://search.earthdata.nasa.gov/ Science data
5. https://www.class.ngdc.noaa.gov/

Course Articulation Matrix-22OEGEO302

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO1	2	2	2	1	2	1	2	-	-	-	-	2
CO2	2	2	2	2	2	2	2	1	1	-	1	2
CO3	2	-	2	-	2	1	2	-	-	-	1	2
CO4	2	2	3	2	2	2	2	1	1	-	-	2
Weighted Average	**2**	**2**	**2.25**	**1.66**	**2**	**1.5**	**2**	**1**	**1**	**-**	**1**	**2**

Scheme of Valuation for Practical Examinations- III Semester

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:Part-A Practical Exercises (C1): 10 marks
  Part-B Practical Exercises (C2): 10 marks + Record: 05 marks = 15 marks
- The student is evaluated for 25 marks in C3 as per the following scheme:

Assessment Criteria	Marks
Maps	04
Maps Scales	04
Conversion of Scales	04
Maps Projections	04
Drawing of Projection	09
Total	**25**

Syllabus DSC (4) Syllabus for B.A. Geography (Basic and Honors)

Semester IV

Course Code: 221444	**Course Title: India- Resources and Sustainability**(Theory) **Representation of Indian Geographical features and Resources** (Practical)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration:2 $\frac{1}{2}$Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

1. Associate and explain the different types and factors associated with Physical features in the Indian context.
2. Describe nature and interplay between water and agricultural resources
3. Analyze the origin, significance and challenges associated with Industries, transportation and communication in Indian context.
4. Analyze and interpret the nature and dynamics of Human resources.

Course Content:

Content	Hours
UNIT – 1 Physical Setting:	
1.1.Location, Size and Extent. Major Physiographic Regions-Northern Mountains, Northern Great Plains, Peninsular Plateau and Coastal Plains and Islands and their Characteristics; 1.2.Climate: Seasonal Weather Characteristics, Climatic Zones. Mechanism and Characteristics of Indian Monsoons. 1.3.Tropical Cyclones and Western Disturbances. 1.4.Floods and Droughts 1.5.Drainage System. 1.6.Soil: Types, Erosion and Conservation. 1.7.Vegetation: Types, Distribution, Afforestation programs, National Parks, Wildlife Sanctuaries, and Biosphere reserves.	**14**
UNIT – 2 Water and Agricultural Resources:	
2.1.Water resources of India, Surface and Groundwater, Water Demand and Utilization. 2.2.Irrigation: Sources, Types and Intensity. Issues and Challenges: Water Resources Scarcity, Water Conservation and Management. 2.3.Watershed Management, Rainwater Harvesting, Recycle and Reuse of water. Interlinking of Rivers, 2.4.National Water Policies, National Water Mission, Jalashakti Abhiyaan. Command Area Development and Water Management. Central Water Commission and Water Tribunal and their role.	**14**

2.5. Agriculture: Land Use and Cropping Pattern – Meaning and Concepts, Land Use and Cropping Patten in India, Agro-climatic Regions, Green Revolution – Causes and Effects, Hunger Index and Malnutrition; Food security and right to food to achieve Zero hunger and Good Health and Wellbeing.	

UNIT – 3 Industries, Transportation and Communication:	
3.1. Locational factors of industries, Major Industrial Regions and their characteristics 3.2. Classification of Industries: Agro-based, Mineral-based, Forest-based and Animal-based industries. 3.3. Special Economic Zones: Industrial / Economic Corridor. 3.4. Transport & Communication: Significance, Growth and Development– Road ways, Railways, Waterways, Airways and Pipeline Networks and their Complementary and Competition. 3.5. Communication: Means of Communication and their Significance **Assignment:** Selecting a region students have to study the locational factors nearby industry and prepare a report.	**14**
Unit – 4 Human Resources:	
4.1. Growth, Distribution and Density of Population. 4.2. Composition of Population: Age, Sex, Rural-Urban Population Composition. 4.3. Migration: Meaning, Factors, Types, Causes and Consequences. 4.4. Human Development in India: Measures, Levels of Development based on HDI 4.5. Field Study: Selecting a region / district students have to examine the levels of Human Development using HDI and prepare a report.	**14**

References:

1. Majid Husain (2020) Geography of India, McGraw Hill Publishers
2. R.C. Tiwari (2016) Geography of India, Provolika Publications, Allahabad
3. D.R.Khullar (2019) India: A Comprehensive Geography ,Kalyani Publishers
4. R.L.Singh (1993) India: A Regional Geography, National Geographical Society of India, New Delhi.
5. Dr Deep Shikha (2016) Geography of India - A Text Book;
6. AlkaGautam (2009) Geography of India, Sharada pustak bhawan, University Road, Allahabad – UP.
7. Sharma TC &Coutinho O (2005) : Economic and Commercial geography of India, Vikas Publishing House ltd., New Delhi-14
8. Pritivish Nag & Smita Sengupta (1992) Geography of India, Concept Publishing Company, New Delhi.
9. Ranganath (2007) Geography of India, Vidhyanidhi Prakashan, Station Road, Gadag-01

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2. https://mausam.imd.gov.in/
3. https://tourism.gov.in/
4. https://www.resourcedata.org/dataset/rgi-ministry-of-minerals-energy-and-water-resources
5. https://dpiit.gov.in/
6. https://agricoop.nic.in/en
7. https://www.fao.org/soils-portal/en/

DSC(4)-Lab

Representation of Indian Geographical features and Resources

	Content of the Practical Course	Hours
Ex.No.1	Mapping exercises on Indian outline Map: International Boundaries, Mountain peaks, Passes, Glaciers and important Physical Divisions of India, Rivers, National Biospheres and National Parks, Dams and Reservoirs, Lakes and Water Bodies, Islands, National Waterways, Ports and Harbours, National High ways, Important Airports, Industrial Corridors, Important Coastal Zones and Beaches, Ecologically Sensitive areas, Important industrial zones, Special Economic Zones, Resource centres and Mining, Cultural Regions, Tribal Areas. **Note:** Each student is expected to complete at least 3 mapping exercises from the above topics which should cover brief description on: Location (Latitude and longitude, state, district, place,) geographic/environmental/ ecological/ political/ economic significance of the place/ location. Minimum 10 locations shall be involved in each exercise.	10
Ex.no.2 and 3,	Mapping Temperature and Rainfall Distribution of India / Karnataka using Isopleth method.	10
Ex.no.4 and 5	Mapping of Agro-climatic zones of India, Flood Prone and Drought Prone Areas,	8
Ex. No.6 and 7	Mapping of Cropping Pattern and Crop intensity of India/ Karnataka. Weaver's Method, Bhatia's Method. Calculation and mapping of Irrigation intensity.	10
Ex.no.8	Human Development Index: Concept, Calculation and Mapping	6
Ex.no.9	Gender Development Index: Concept, Calculation and Mapping	6
Ex.no.10	Human Poverty Index: Concept and Calculation and Mapping	6

Reference:

1) Hartshorne,T.A.,&Alexander,J.W.(2010).EconomicGeography.NewDelhi:PHILearning.
2) Knox,P.,Agnew,J.,&Mc Carthy, L.(2008).The Geography of the World Economy. London: Hodder Arnold.
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4) Siddhartha,K.(2000).EconomicGeography:Theories,ProcessandPatterns,NewDelhi:KisalayaPublications.
5) Smith,D.M.(1971).Industrial Location: An Economic Geographical Analysis, New York: John Wiley and Sons.

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1. https://www.india.gov.in › india-glance
2. https://www.mapsofindia.com
3. https://en.wikipedia.org
4. https://kids.nationalgeographic.com
5. https://byjus.com › UPSC Preparation

Course Articulation Matrix - 221444

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO1	3	2	2	2	2	2	2	1	1	1	2	3
CO2	3	2	-	-	-	3	3	2	1	-	1	3
CO3	2	2	2	1	1	2	3	1	-	-	-	2
CO4	2	2	1	1	-	2	2	1	-	-	-	2
Weighted Average	**2.5**	**2**	**1.66**	**1.33**	**1.5**	**2.25**	**2.5**	**1.25**	**1**	**1**	**1.5**	**2.5**

OE(4) Geography Syllabus for All Programs(Except Arts)

Semester IV

Course Code: 22OEGEO401	**Course Title: Geography of Karnataka**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):

1. Acquire the knowledge of basic Physical features , climate and vegetation in reference to specific landscape of Karnataka.
2. Analyze the different aspects of Soil, Irrigation and Agriculture and their interrelation.
3. Examine the natural resources and their utilization in the Industries; especially in special Economic zones (SEZ's).
4. Analyze the emergence and growth of transport and Information technology in the context of Karnataka; and also describe the socio-demographics distinctly .

Course Content

UNIT - 1 Physical Background **12 HOURS**

1.1. Location, size and Administrative divisions.
1.2. Physiographic Divisions: Coastal Regions, Malnad Regions and Maidan Regions.
1.3. Weather and Climate: Seasons, Distribution of Rainfall and Temperature, Climatic regions, Drought prone areas in Karnataka.
1.4. Drainage Systems: Major Drainage Systems in Karnataka. East flowing rivers and West flowing rivers.
1.5. Natural Vegetation: Types of vegetation, Distribution of forests in Karnataka, Protection and Conservations. Reserve Forests and Protected Forests in Karnataka, National Parks and Bird Sanctuaries in Karnataka.

UNIT - 2 Soil, irrigation and Agriculture **10 HOURS**

2.1. Soil: Types and Distribution, Regional Issues of Soil Quality and Management.
2.2. Water Resources: Distribution of Water Resources, Irrigation – Sources of irrigation, Multipurpose River Valley Projects.
2.3. River Water Disputes with the neighbouring states.
2.4. Agriculture regions of Karnataka. Major Food Crops – Paddy, Ragi, Maize, Pulses.
2.5. Commercial Corps – Cotton, Sugarcane, Tobacco, Coffee, Spices,
2.6. Livestock and Fishing.

Assignment: Students need to visit local fields and get to know how soil conservation plans are prepared and submit report

UNIT - 3 Minerals, Energy and Manufacturing: 10 HOURS

3.1. Major Mineral resources of Karnataka and their Regionalization. Iron ore, Manganese, Gold, Bauxite

3.2. Energy Resources: Types and their Distributions. Conventional and Non-Conventional Sources.

3.3. Industries: Textile Industries, Iron and Steel Industries, Sugar Industries. Industrial Regions and Special Economic Zones of Karnataka.

UNIT –4. Transport, Information & Communication Technology and Population 10 HOURS

4.1.Transportation: Types, Distribution of Transportation.

4.2.Growth and Distribution of Information Technology in Karnataka.

4.3.Population Growth, Distribution and Density of Population. Population Composition – Sex Ratio, Literacy. Human Development in Karnataka (HDI)

Reference:

1. Ranganath (2015), Geography of Karnataka, Publisher: Mysore Book House
2. S.S.Nanjannavar (2016), Geography of Karnataka, Prabhu publications
3. R. N. Tikka (2002),Physical Geography
4. MisraR.P(1969) Geography of Mysore State
5. SarmahDipak (2019), Forest of Karnataka-A Paronomic View, Notion Press
6. Director, Census Reports Published by Govt. of Karnataka
7. Karnataka State Gazetteer Volume- I & II

Websites:

1. https://ksrsac.karnataka.gov.in/
2. https://ksdma.karnataka.gov.in/english
3. https://raitamitra.karnataka.gov.in/english
4. https://www.karnatakatourism.org/tourism-department/

Course Articulation Matrix – 22OEGEO401

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
CO1	3	2	2	2	2	2	2	1	1	1	2	3
CO2	3	2	-	-	-	3	3	2	1	-	1	3
CO3	2	2	2	1	1	2	3	1	-	-	-	2
CO4	2	2	1	1	-	2	2	1	-	-	-	2
Weighted Average	**2.5**	**2**	**1.66**	**1.33**	**1.5**	**2.25**	**2.5**	**1.25**	**1**	**1**	**1.5**	**2.5**

OE(4) Geography Syllabus for All Programs(Except Arts)

Course Code: 22OEGEO402	**Course Title: Population and Settlement Geography**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration:2 $\frac{1}{2}$Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):

1. Understand the basic concepts of Socio- demographics in Population and Human Settlement.
2. Determine and explain the dynamics of human Demography.
3. Analyze of the interaction between man-environment and its influence on Human settlements.
4. Classify and interpret the nature and structure of Human settlements in rural and urban contexts.

Course Content

UNIT - 1 Population Geography	**12 HOURS**
1.1.Meaning, Definitions, Scope and nature of population geography 1.2.Global Population size and growth, Malthus Theory, Demographic Transition Theory 1.3.Over, Under and Optimum Population 1.4.Population Policies in the world – Social Well being, Quality of Life	
UNIT - 2 Population Dynamics	**10 HOURS**
2.1. Fertility – Measures and Distribution 2.2.Mortality – Measures and Distribution 2.3.Migration – Types, Causes and Consequences	
UNIT - 3 Settlement Geography	**10 HOURS**
3.1.Meaning, Definitions, nature and importance of settlement geography, 3.2.Origin of settlement, influencing factors 3.3.Site and situation of settlement – Stable and Unstable settlement	
UNIT –4. Classification of Settlements- Rural and Urban Settlements	**10 HOURS**
4.1.Rural Settlement – Types, Pattern, Functions 4.2.Rural-Urban Continuum and Fringe 4.3.Urban Settlement - Definition of urban place, Hierarchy, 4.4.Functional classification of towns, Concept of Urban morphology. 4.5. Primate City, Rank Size Rule	

References:

1.Alan Bowman and Andrew Wilson (2011), Settlement, Urbanization, and Population, Oxford University Press, UK.
2.Chandna R.C (2011), Geography of Population, Kalyani publishers, Bangalore.
3.Izzi Howell (2019), Population and Settlement Geography (Geographics), Franklin Watts, UK.
4.John Pallister (2004), GCSE Geography: Human - Population and Settlement,Hodder Education Group, UK.
5.Majid Husain (2011) Human Geography, Rawat Publication, Jaipur.
6.Prithvish Nag, Debnath (2021), Population Geography, BharatiPrakashan, Bangalore.
7.Rama Yagya Singh (1994), Geography of Settlement, Rawat Publications, Jaipur
8.Sumita Ghosh (1998), Introduction to Settlement Geography, Orient Longman, Hyderabad.

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3.https://lotusarise.com › introduction-to-settlement-
4.https://www.geographypods.com
5.https://en.wikipedia.org
6.http://www.rnlkwc.ac.in

Course Articulation Matrix – 22OEGEO402

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	-	-	1	-	3	3	1	-	-	-	2
CO2	2	2	2	1	1	2	2	2	-	-	-	2
CO3	2	1	1	1	2	-	2	2	1	-	-	2
CO4	2	2	2	2	1	2	2	1	-	-	1	3
Weighted Average	**2.25**	**1.66**	**1.66**	**1.25**	**1.33**	**2.33**	**2.25**	**1.5**	**1**	**-**	**1**	**2.25**

Continuous Formative Evaluation Internal Assessment/Exams-IV Semester

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester end Theory Examinations respectively and 50:50 for IA and Semester end Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar,case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the courses and within 45 working days of semester program

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc.

This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/ assignment /project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course Shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	10	10	20
Seminar/Presentation/Assignment/Activity	10		10
Case Study/Field Work/Project Work/Quiz etc.		10	10
Total	**20**	**20**	**40**

- For practical course of full credits, seminar shall not be compulsory. In its place, marks

  shall be awarded for Practical Record Maintenance (the ratio is 25 (10 + 15):25).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2

  component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencementof the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations III &IV Semester

- C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 isthe semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme: Part-A Practical Exercises (C1): 10 marks

  Part-B Practical Exercises (C2): 10 marks + Record: 05 marks = 15 marks
- The student is evaluated for 25 marks in C3 as per the following scheme:

Assessment Criteria	Marks
Mapping Exercises	04
Distribution Maps	04
Climate Maps	04
Cropping pattern Maps	04
Human Index Maps	09
Total	**25**

DSC Theory and OE Question Paper Pattern

B.A GEOGRAPHY (For III and IV Semester) 2022 Onwards

Exam Duration: $2\frac{1}{2}$Hours **Max. Marks: 60**

Part-A

I. Answer any Four of the following questions. 4X3=12

1)……

2)……

3)……

4)……

5)……

6)……

Part-B

II. Answer any Three of the following questions. 3X6=18

7)……..

8)……..

9)…….

10)……

11)……

Part –C

III. Answer any Three of the following questions. 3X10=30

12)……

13)……

14)……

15)……

DSC Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** $2\frac{1}{2}$Hours

Instructions: Paper Setting

The Theory exam shall be conducted for 60 Marks and it consists of 3 Sections namely

- The Question Paper is divided into 3 parts: Part – A, Part – B and Part- C
- Section A, Section B, Section C with internal choices. (Short, Medium and Long answer questions).
- Section A - Each question carries 3 marks and student has to answer 4 out of 6 questions.
- Section B - Each question carries 6 marks and student has to answer 3 out of 5 questions, and
- Section C - Each question carries 10 marks and student has to answer 3 out of 4 questions.

Open Elective Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** $2\frac{1}{2}$Hours

Instructions: Paper Setting

The Theory exam shall be conducted for 60 Marks and it consists of 3 Sections namely

- The Question Paper is divided into 3 parts: Part – A, Part – B and Part- C
- Section A, Section B, Section C with internal choices. (Short, Medium and Long answer questions).
- Section A - Each question carries 3 marks and student has to answer 4 out of 6 questions.
- Section B - Each question carries 6 marks and student has to answer 3 out of 5 questions, and
- Section C - Each question carries 10 marks and student has to answer 3 out of 4 questions.

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DEPARTMENT OF GEOGRAPHY

UG ☑

PG ☐

NEP Syllabi for V and VI Semester B.A. Geography

2023-24

DEPARTMENT OFGEOGRAPHY

MOTTO

Down to Earth Awareness

VISION

To make a centre of excellence in Geographic information for a balanced development

MISSION

To spread the awareness of Geographic base and to Develop Geographic consciousness among younger generations for understanding and creating a healthier Physical and Cultural Environment.

Program Outcomes (POs) for Bachelor of Arts

POs	Details of the Programme Outcomes (POs)
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

List of BoS Members

Sl. No.	Category	Name &Designation	Address for Communication	E-mail & Mobile No.
1	Chairperson	**Dr.K.K.Somashekara** Assistant Professor& HoD	Department of Geography SBRR Mahajana First Grade College (A),Jayalakshmipuram, Mysuru –12	somashekarkk.fgc@mahajana. edu.in 9035456449
2	Member	**Dr. Doddarasaiah. G** Assistant Professor	Department of Geography SBRR Mahajana First Grade College (A),Jayalakshmipuram, Mysuru -12	gdurs2014@gmail.com, Mobile: 8892963344
3	Member	**Siddaraju. C. S** Assistant Professor	Department of Geography SBRRMahajana First Grade College (A),Jayalakshmipuram, Mysuru -12	sidducs1981@gmail.com, Mobile: 9141481046
4	Nominee by the Vice Chancellor	**Dr. B.Chandrashekara** Professor	Department of studies in Geography, Manasagangothri University of Mysore, Mys	chandrubuom@gmail.com, Mob: 9448912063
5	Experts from Other University	**Dr. Srinivas** Associate Professor	Department of Geography Govt. First Grade College, Kengeri, University of Bangalore Bengaluru	yadavaniseena@gmail.com, Mob: 9845286949
6	Experts from Other University	**Dr.Amarendra. K.N Principal**	HoD, Department of Geography Sri Siddaganga First Grade College Nelamangala Rural, Bangalore University	knamarnath2010@gmail.com, Mobile: 9008046170
7	Alumnus	**Ms. Sreeja** Assistant Teacher	Excel Public School ,Koorgalli Industrial Area, Belwadi Post, Mysuru, Karnataka 570018	shree- shreeja@yahoo.com Mobile -7204220808
8	One Person from Industry/Corporate Sector/ Allied Area	**Ravi. R.** Global Agency	# 471, D.Subbaiah Road, K.R.Mohalla, Near Ramaswamy Circle, Mysuru-570004	ravi_coop1978@yahoo.com Mobile: 9900143297

Year-wise Structure (NEP2020): Geography
Discipline Specific Courses (DSC) and Internship

III Year

Course Type, Code and Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		Marks
Geography– V Semester									
DSC (5) 231544	**Population Resources and Dynamics**	4	0	4:0:0	20	20	60	$2\frac{1}{2}$Hours	100
DSC(5) - Lab	**Techniques in Population Geography**	0	4	0:0:2	10	15	25 (FA) 25 (SA)	3Hours	50
DSC (6) 231545	**Fundamentals of Remote Sensing**	4	0	4:0:0	20	20	60	$2\frac{1}{2}$Hours	100
DSC (6)- Lab	**Satellite Images, Interpretation and Aerial Photography**	0	4	0:0:2	10	15	25 (FA) 25 (SA)	3Hours	50
Geography–VI Semester									
DSC (7) 231644	**Environmental Geography**	4	0	4:0:0	20	20	60	$2\frac{1}{2}$Hours	100
DSC(7)- Lab	**Methods in Environmental Geography**	0	4	0:0:2	10	15	25 (FA) 25 (SA)	3Hours	50
DSC (8) 231645	**Fundamentals of Geographical Information System**	4	0	4:0:0	20	20	60	$2\frac{1}{2}$Hours	100
DSC (8)- Lab	**Digital Mapping Techniques in GIS**	0	4	0:0:2	10	15	25 (FA) 25 (SA)	3Hours	50
INT	Internship **23INTGEO01**	2	0	2:0:0	25	25	------	----	50

Syllabus DSC (5) Syllabus for B.A. Geography (Basic and Honors)

Semester V

Course Code: 231544	**Course Title: Population Resources and Dynamics**
CourseCredits:06 (4:0:2)	**Hours of Teaching/Week:**04 (Theory)+04 (Practical)
Total Contact Hours: 60Hours(Theory) 60Hours(Practical)	**Formative Assessment Marks:** 40(Theory) 25 (Practical)
Exam Duration:$2\frac{1}{2}$Hours (Theory) 3 Hours(Practical)	**Semester End Examination Marks:**60 (Theory) 25 (Practical)

Course Outcomes (COs)

CO1: Comprehend critically the skills on the demographic composition of a country.
CO2: Examine the dynamics of Geographical Population and Migration
CO3: Evaluate the population resources.
CO4: Analyze population growth issues and challenges&apply various technologies in Representation of demographic data

Content	Hours
UNIT -1 Introduction	
Nature and Scope of Population Geography, Population Geography and Demography, Approaches to study population Geography, Sources of population data. World Population: Distribution- patterns, Population growth, Density of population, population determinants with comparison to India.	**15**
UNIT -2 Demographic Change	
Concepts of over, under & optimum population; Components of Population Change. Fertility and Mortality: Concepts, measures of fertility and mortality, determinants and world patterns of fertility and mortality. Demographic Attributes and Demographic Transition. Theories of Population Growth: T.R.Malthus and David Ricardo **Assignment**: Students must prepare a report relating to population change in their own area and submit a report.	**15**
UNIT –3 Migration	
Meaning, types, causes, consequences. Theories of Migration: Theory of migration by Ravenstein and comprehensive theory by Lee. Population composition and characteristics- Age, Sex, rural-urban and	**15**

occupational structure. **Case Study**: Students need to visit nearby village and get to know how and why migration takes place and submit a report.	
UNIT -4 Population as Resource	
World Population Resource Regions. Social well-being and quality of life; population as a social capital. Contemporary Issues - Ageing of Population; Declining Sex Ratio, Population policies in developed and developing countries. Population Policies in India. Human Development Index (HDI)	**15**

References:

1.Chandna R.C. (2009), Geography of Population, Kalyani Publishers, Aneari Road, Daryaganj, New Delhi.

2.Majid Hussain (1999), Human Geography, Rawat publications, Jaipur.

3.Trewartha GT. (1959) A Geography of Population, world Patterns, John Wiley and Sons Inc. New York.

4.Ghosh BN. (1987) Fundamentals of population Geography s, sterling publishing company, New Delhi

5.Jhingan ML. B.K. Bhat, JN Deasi (2003) Demography, Urinda Publishers Pvt. Ltd. Delhi

6.R.K. Tripati ((2000) Population geography, commonwealth publishers, New Delhi.

7.Kayastha SL. (1998) Geography of Population, Rawat publications, jaipur.

8.Clerk I (1984) Geography of populations, approaches and applications, pergamon press, Oxford, UK.

9.Ritu Malik (2013), Changes in population Dynamics, Sanjay Prakashan

10.Prthvish Nag, G.C.Debnath (2021), Population Geography, Bharti Prakashan, Varanasi

11. B.M.Bharathi, Janasankya adhyayana

Website links:

1. https://censusindia.gov.in/census.website/

2. https://mea.gov.in/icm.htm

3. https://population.un.org/wpp/

4. https://www.popcouncil.org/research/india

5. https://www.cdc.gov/csels/dsepd/ss1978/lesson3/section3.html

DSC-(5)-Lab

Techniques in Population Geography

Content of the Practical Course		Hours
Exercise 1	**Sources of population data:** Census of India, UNPD (united nations population division), birth and death registry VSS (Vital statistics survey), NSS (National Sample Survey), NFHS (National Family and Health Survey)	**15**
Exercise 2	**Population distribution and density:** a) Thematic maps for population Distribution-patterns (dot map, Choropleth maps). b) Calculation of Population Growth rate-(Bar Graphs) c) Calculation of population projection, arithmetic method d) Calculation of population Density, arithmetic density and agriculture density.	**15**
Exercise 3	**Calculation of different types of fertility and mortality rates for any one region** Eg: India / Karnataka /District, using the Census of India latest data. a) Crude birth rate b) General fertility rate, Total fertility rate c) Crude death rate/ Mortality rate, Infant mortality rate d) Age-specific mortality rate e) Sex-specific mortality rate	**15**
Exercise 4	**Thematic maps for Population composition:** construction of population pyramids for Age, Sex, Rural and Urban, on outline map Eg: India / Karnataka /District, using the Census of India latest data	**15**

Reference:

1. R.L.Singh-Practicals in Geography
2. M.F.Karennanavar & Nanjannanavar.S-Prayogika Bhoogolashastra
3. Dr.Ranganath-Prayogika Bhoogolashastra
4. Mohammad Izhar Hassan- Population Geography A Systematic Exposition1st Edition
5. Suzanne Davies Withers- Population Geography
6. Dr. Raj Kumar Patel- Population Geography Manglam Publications
7. De Blij, Why Geography Matters, x.
8. Thomas M. Poulson, Nations and States: A Geographic Background to World Affairs (Englewood Cliffs, NJ: Prentice Hall, 1995).

9. Martin Ira Glassner, Political Geography, 2nd ed. (New York: John Wiley, 1996).
10. Ronald J. Johnston, Peter J. Taylor, and Michael J. Watts, The Geographies of Global Change (Oxford: Blackwell, 1995).

Webiste links:

1. https://population.un.org/wpp/
2. https://www.popcouncil.org/research/india
3. https://www.cdc.gov/csels/dsepd/ss1978/lesson3/section3.html
4. See www.census.gov/rdo/data/009919.html
5. http://www.environicsanalytics.ca
6. https://www.eolss.net › sample-chapters

CourseArticulationMatrix-231544

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	1	-	2	2	2	-	1	-	2
CO2	2	2	1	2	2	1	2	2	2	2	2	2
CO3	2	2	1	2	1	2	2	1	1	2	-	2
CO4	2	2	1	2	1	2	2	1	1	1	1	2
Weighted Average	**2**	**2**	**1**	**1.75**	**1**	**1.75**	**2**	**1.5**	**1**	**1.5**	**0.75**	**2**

Syllabus DSC (6) Syllabus for B.A. Geography (Basic and Honors)

Semester V

Course Code: 231545	**Course Title: Fundamentals of Remote Sensing**
CourseCredits:06 (4:0:2)	**Hours of Teaching/Week:**04(Theory)+04 (Practical)
Total Contact Hours: 60Hours(Theory) 60Hours(Practical)	**Formative Assessment Marks:** 40(Theory) 25(Practical)
Exam Duration: $2\frac{1}{2}$Hours (Theory) 3 Hours(Practical)	**Semester End Examination Marks:**60(Theory) 25(Practical)

Course Outcomes (COs)

CO1: Interpret the components, history of remote sensing and the types of remote sensors and their platforms

CO2: Interpret aerial photographs and identify the digital and analog data.

CO3: Evaluate the applications of remote sensing and the new satellite programs of India.

CO4: Analyze the ground truth verification using Google Earth and evaluate its usefulness

Content	Hours
UNIT -1 Introduction to Remote Sensing	
Definition and Components, History of Remote Sensing, Electromagnetic Magnetic Spectrum, Interaction of EMR with the atmosphere and with the surface feature, Atmospheric window, spectral reflectance of land covers (minerals, rocks, water, vegetation, and urban area).	**15**
UNIT -2 Sensors & Platforms	
Types of orbits-sun-synchronous and geosynchronous, Sources of energy, Classification of remote sensors - Active, Passive, Electro-mechanical and optical sensors. Resolution concept - Spectral, Radiometric, and temporal resolution. Platform types and characteristics Launch of space vehicles. Angular characteristics-FOV and IFOV, push broom and whiskbroom cameras, Panchromatic, multispectral, hyper spectral scanners, and geometric characteristics of the imageries. **Assignment**: Students need to prepare a report on how satellite images are captured, processed, and distributed to the end users by citing Bhuvan, ISRO, ISAC, NRSC, and SGC Websites.	**15**
UNIT –3 Aerial Photography	
Elements, Types and interpretation of Aerial photography, Principles,	

Classification of Aerial photographs based on Height and Tilt, Scales, Components of camera, film, Aerial platforms. Elements of Aerial photo interpretation, Digital and Analog data, Image formats, Stereo pairs, Applications of Aerial Photography.	**15**
UNIT -4 Applications of Remote Sensing	
Indian remote sensing Centers and their activities, new satellite programs of India. Different Satellites and their Application in Land Resources, Meteorology, and Hydrology. Ground truth verification using Google Earth. Field Activity: Students need to visit a nearby village and get to know how remote sensing images and real world looks and submit a report.	**15**

Reference:

1. Lilles and T. Mand Kiefer R.W (2021), Remote Sensing and Image interpretation, 7th Edition, John Wiley & Sons, Canada.
2. Jensen J. R, (2012), Remote Sensing of Environment: An Earth Resources Perspective, 2nd Edition, Pearson Education, Upper Saddle River, Prentice Hall, New Jersey.
3. Elachi Candvan Zyl J .J, (2006), Introduction to the Physics and Techniques of Remote Sensing, John Wiley & Sons, Canada.
4. Joseph G, (2005), Fundamentals of Remote Sensing, 2nd Edition, Universities Press (India) Pvt Ltd, Hyderabad
5. Narayan LRA, (1999), Remote Sensing and its Applications, Universities Press (India) Pvt Ltd, Hyderabad.
6. Rampal K. K, (1999), Handbook of Aerial Photography and Interpretation, Concept Publishing Co, New Delhi
7. Avery T. E and Berlin G.L, (1992), Fundamentals of Remote Sensing and Air Photo Interpretation, 5th Edition, Prentice Hall, New Jersey.
8. Sabins, F.F. Jr, (1987), Remote Sensing; Principles and Interpretation, 2nd Edition, W.H. Freeman and Co, New York.
9. Jensen, John R., (2005), Introductory Digital Image Processing, 3rd Ed., Upper Saddle River, NJ: Prentice Hall, 526 pages.

Website links:

1. Projections: https://map-projections.net/imglist.php
2. https://webapps.itc.utwente.nl/librarywww/papers_2009/general/principlesremotesensing.
3. Pdf http://earthobsevatory.nasa.gov/Library/RemoteSensing
4. https://bhuvan.nrsc.gov.in/home/index.php
5. https://map-projections.net/imglist.php

DSC(6) -Lab

Satellite Images Interpretation and Aerial Photography

Content of the Practical Course		Hours
Exercise 1	**Basics:** 1. Basic information of the image (projection histogram, layers, pixel) 2. Visual interpretation: colour, texture, association, pattern, tone, shape. 3. Satellite Products and Band Characteristics, band combination	**15**
Exercise 2	**Satellite Images:** 1. Satellite image downloading portals, Bhuvan, USGS explorer. 2. Image Enhancement: Radiometric, spatial enhancement 3. Layers Stacking Students need to prepare a report on how satellite images are captured, processed and distribution to the end users by citing Bhuvan, ISRO, ISAC,NRSC, USGC Websites.	**15**
Exercise 3	**Pre-Processing:** 1. Geometric and Radiometric Correction 2. Spectral enhancement: Spectral Indices, NDVI 3. Image Classification: Supervised and Unsupervised 4. Change Detection	**15**
Exercise 4	**Aerial Photography:** 1.Determinants of scales 2. Types of Scales 3.Conversion of Scales and interpretation through stereoscope	**15**

Reference:

1. Elachi Candvan Zyl J .J, (2006), Introduction to the Physics and Techniques of Remote Sensing, John Wiley & Sons, Canada.
2. Joseph G, (2005), Fundamentals of Remote Sensing, 2nd Edition, Universities Press (India) Pvt Ltd, Hyderabad
3. Narayan LRA, (1999), Remote Sensing and its Applications, Universities Press (India) Pvt Ltd, Hyderabad.
4. Rampal K. K, (1999), Handbook of Aerial Photography and Interpretation, Concept Publishing Co, New Delhi
5. David P. Paine, James D. KiserJohn Wiley & Sons, 25-Apr-2003 -

6. David P Paine and James D Kiser Publisher: John Wiley & Sons
7. Richards, J.A., 1986, Digital Image Processing, Springer-Verlag: New York.

Website links:

1. https://bhuvan.nrsc.gov.in/home/index.php
2. https://map-projections.net/imglist.php
3. https://pivotid.uvu.edu › papers Collection › Book
4. https://www.accessengineeringlibrary.com › chapter4
5. https://www.scribd.com › Ebooks › Earth Sciences
6. https://www.nhbs.com › aerial-photography-and-imag.

CourseArticulationMatrix-231545

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12
CO1	2	2	2	1	2	-	2	-	1	-	2	2
CO2	2	2	1	1	2	-	2	-	1	-	1	2
CO3	2	1	1	1	1	-	1	-	1	1	1	2
CO4	2	2	1	1	2	1	2	-	1	1	-	2
Weighted Average	**2**	**1.75**	**1.25**	**1**	**1.75**	**0.25**	**1.75**	**-**	**1**	**0.50**	**1**	**2**

Syllabus DSC (7) Syllabus for B.A. Geography (Basic and Honors)

Semester VI

CourseCode:231644	**Course Title: Environmental Geography**
CourseCredits:06 (4:0:2)	**Hours of Teaching/Week:**04(Theory)+04 (Practical)
Total Contact Hours: 60Hours(Theory) 60Hours(Practical)	**Formative Assessment Marks:** 40(Theory) 25(Practical)
Exam Duration:$2\frac{1}{2}$Hours (Theory) 3 Hours(Practical)	**SemesterEndExaminationMarks:**60(Theory) 25(Practical)

Course Outcomes (COs)

CO1. Comprehend the interdisciplinary nature and the relationship between man and the Environment.

CO2. Analyze the functioning of ecosystems and its impact on human activity and global ecological changes.

CO3. Evaluate man-made changes like pollution, environmental hazards, and the depletion of natural resources.

CO4. Examine Environmental policy, impact assessment and conservation measures.

Content	Hours
UNIT -1 Introduction to Environment Geography	
Nature and Interdisciplinary Aspect of Environmental Geography. Ecological Approaches. Definition and meaning of environment. Habitat. Ecological Niche. Biosphere and Biodiversity; bio-diversity and sustainable development. Biomes – major Biomes of the world. Man and Environmental Relationships.	**15**
UNIT -2Ecosystem	
Structure and Functioning of Ecosystem, Pond as an Ecosystem, ecosystem management and conservation; Principle of ecology; human ecological adaptation; influence of man on ecology and environment. Global and regional ecological change & imbalance. Food Chains, Food Webs, Food Pyramid.	**15**
UNIT –3 Man-Induced Changes in Environment	
Environmental Pollution, i.e., Air, Water, Noise; Solid Waste with special reference to India. Environmental Hazards, i.e., earth as Warehouses, Flood, Famines, Land Slides, Avalanches, Forest Fires, Impact of Green Revolution and Extinction of Species. Man-Made Ecosystem - Urban, Ecotourism, National Parks and Sanctuaries.	**15**

Depletion of Ozone, Green House Effect and Acid Rain.	
UNIT -4 Principles of Environmental Management:	
Environmental Policy of India, (post-2000 AD). Environment Impact Assessment (EIA). Global Summits & Agencies of Environment Conservation. Environmental degradation, management and conservation. Problems of Deforestation and conservation measures. Environmental policy; environmental hazards and remedial measures. Environmental Education and Legislation.	**15**

References

1. Strahler A.N. (1968) The Earth Sciences, Harper International Education, New York.

2. Richard H.B. (2004) Physical Geography, Heinmann Simple Services, Rupa & Company, New Delhi

3. Robinson H. (1982) Bio Geography, ELBS, New York.

4. Healey I.N. and Moore P.D. (1973) Biogeography, Backwell Oxford, U.k

5. Strahler A.N. and Strahler A.H. (1973) Environmental Geo Science, Hamilton, California, USA.

6. Savindra Singh (2004) Environmental Geography, Prayog Pustak Bhawan, Allahabad, India.

7. Paul Selman (2000) Environmental Planning, Sage Publications, New Delhi

8. Cheryl Simon Silve & Ruth S. De Fries (1991) One Earth One Future-Our chaining Global Environment, National Academy of Sciences, Affiliated to East-West Press Pvt. Ltd. New Delhi.

9. Strahler A.N. and Strahler A.H. (1977) Geography and Man's Environment, John Wiley & Sons, New York

10. Goldsmith Edward et al. (1988) The Earth Report – The Essential Guide to Global Issues, Price Stern Solan Inc. California, USA

11. Y.K. Sharma (2020), Narain's Environmental Geography (Resource and Development), Lakshmi Narain Agarwal

12. H.M. Saxena (2021), Environmental Geography, Rawat Publications

13. Strahler A.N. (1968) The Earth Sciences, Harper International Education, New York.

14. Richard H.B. (2004) Physical Geography, Heinmann Simple Services, Rupa& Company, New Delhi

15. Robinson H. (1982) Bio Geography, ELBS, New York.

16. Healey I.N. and Moore P.D. (1973) Bio-Geography, Backwell Oxford, U.K.

17. Strahler A.N. and Strahler A.H. (1973) Environmental Geo Science, Hamilton,

California, USA.

18. Savindra Singh (2004) Environmental Geography, Prayog Pustak Bhawan, Allahabad, India.

19. Paul Selman (2000) Environmental Planning, Sage Publications, New Delhi

20. Cheryl Simon Silve & Ruth S. De Fries (1991) One Earth One Future-Our chaining Global Environment, National Academy of Sciences, Affiliated to East-West Press Pvt. Ltd. New Delhi.

21. Strahler A.N. and Strahler A.H. (1977) Geography and Man's Environment, John Wiley & Sons, New York

Website links:

1. https://moef.gov.in/en/
2. http://environmentclearance.nic.in/
3. https://ndma.gov.in/
4. https://bhuvan.nrsc.gov.in/home/index.php
5. http://www.indiaenvironmentportal.org.in/

DSC (7) -Lab
Methods in Environmental Geography

Content of the Practical Course		
Exercise 1	1. List out Biotic and Abiotic elements in the local region. 2. Identify and map micro-Biomes in the local region and study the biodiversity of the place.	**15**
Exercise 2	3. List some ecosystem management and conservation methods in the local region for water bodies, 4. mapping of water bodies, 5. Mapping of bore wells. 6. Map the polluting points in the local area and their influence of man on local environment.	**15**
Exercise 3	7. Mapping of Waste disposal sites 8. Suitability of the site for waste disposal (with reference to height, location, land use, land value, slope,	**15**
Exercise 4	9. Mapping of parks and open spaces in the neighborhood. 10. Mapping of areas in the neighborhood where crowding is prevalent and type of land use around such places. **Note:** Educational/Study tour is mandatory. Each student should submit tour report for internal assessment.	**15**

Materials required for the practical survey:

a) **Use boundary map of the neighborhood area and GPS (Field Mapping)**
b) **Google earth can also be used** for **mapping neighborhood area.**

Reference:

1. Noel Castree, David Demeritt, Diana Liverman and Bruce Rhoads -A Companion to Environmental Geography
2. Walter A. Rosenbaum Environmental Politics and Policy
3. Savindra Singh (2004) Environmental Geography, Prayog Pustak Bhawan, Allahabad, India.
4. Paul Selman (2000) Environmental Planning, Sage Publications, New Delhi
5. Environmental Pollution Consequences and Measures: Chaurasia. B.P
6. Environmental Geography: Saxena, H.M
7. Ecology and Environment: Sharma P.D
8. Environmental Geography: S.S. Nanjannanavar (Kan.Version)
9. Agarwal K.C: Environmental Biology, Nidhi Publishers Ltd, 2001
10. MathurH.S: Environmental Resources; The crisis of Development

11. 3. OdumE.P: Fundamentals of Ecology, WB Saunders Co, London, 1971
12. 4. Dash M.C: Fundamentals of Ecology, Tata McGraw Hill New Delhi 2002

Web links and Video Content

1.https://patnawomenscollege.in
2. https://byjus.com/biology/ecosystem
3. http://www.pcpolytechnic.com/mechanical
4. http://egyankosh.ac.in/bitstream

CourseArticulationMatrix-231644

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	1	2	1	1	1	-	2
CO2	2	2	-	1	-	1	2	2	1	1	2	2
CO3	2	2	2	1	1	2	2	2	1	1	-	2
CO4	2	2	-	-	1	-	2	1	-	-	-	2
Weighted Average	**2**	**1.75**	**0.75**	**0.75**	**0.75**	**1**	**2**	**1.75**	**0.75**	**0.75**	**0.25**	**2**

Syllabus DSC (8) Syllabus for B.A. Geography (Basic and Honors)

Semester VI

CourseCode:231645	**Course Title: Fundamentals of Geographic Information Systems**
Course Credits:06 (4:0:2)	**Hours of Teaching/Week:**04(Theory)+04 (Practical)
Total Contact Hours: 60Hours(Theory) 60Hours(Practical)	**Formative Assessment Marks:** 40(Theory) 25(Practical)
Exam Duration:$2\frac{1}{2}$Hours (Theory) 3 Hours(Practical)	**SemesterEndExaminationMarks:**60(Theory) 25(Practical)

Course Outcomes (COs)

CO1: Study the definition, components and interdisciplinary domains of GIS.
CO2: Apply geodesy and spatial mathematics for measuring distances and coordinates.
CO3: Analyze the spatial data structures, sources, errors & scales for precision & accuracy.
CO4: Execute geo-processing and visualization techniques including spatial and non-spatial queries.

Content	Hours
UNIT -1 Introduction	
Definition, scope of GIS in digital world; Components, functionalities, merits and demerits, global market. Interdisciplinary domains and its integration with GIS	**15**
UNIT -2Geodesy and Spatial Mathematics	
Meaning, scope of geodesy, geographical coordinates, latitude, longitudes; Datum: WGS-84, vs NAD-32. UTM; Aerial Distance measurement using Geographic and projected coordinates, Area, Perimeter, length by coordinates and various international measures. **Assignment:** students need to prepare hand drawn maps with the help of graticules.	**15**
UNIT –3 Data and Scale	
Spatial Data and its structures; Sources and Types of data collection. Data errors and relationships. Large Scale vs Small Scale; Generalization; precision and accuracy of data..	**15**
UNIT -4 Geo-processing and Visualization	

Spatial and Non-Spatial Queries; Proximity analysis, Preparation of Terrain and Surface models. Hotspot and density mapping. Types of maps, thematic maps and its types, relief maps, flow maps and cartograms. Tabulations: Graphs and Pivot tables. **Case Study:** Students need to collect available spatial and non-spatial data of all the talukas of their districts from online resources.	**15**

References

1. Ian Heywood (2011), An Introduction to Geographical Information Systems, Pearson
2. Aronoff, S. (1989), Geographic Information Systems: A Management Perspective, Geocarto International: Vol. 4, No. 4, pp. 58-58.
3. Elangovan, K. (2006), GIS - Fundamentals, Applications, and Implementations, Nipa
4. Chang, Kang – Tsung (2015), Introduction to Geographical Information Systems, McGraw-Hill Education
5. Bhatta, B. (2011), Remote Sensing and GIS, Oxford
6. Sharma, H.S. (2006), Mathematical Modelling in Geographical Information System, Global Positioning System and Digital Cartography – New Delhi, India
7. Spatial Analysis and Location-Allocation Models - Ghosh, A. and G. Rushton (1987)
8. Geographic Information Systems and Cartographic Modelling - Tomlin, C.D. (1990)
9. Geographic Information Systems and Science – Paul A. Longley, et.al. (2015)
10. Geographic Information Systems and Environmental Modelling - Clarke, C.,K. (2002)
11. An Introduction to Geographical Information Systems, 3rd Edition- Ian Heywood, Sarah Cornelius, Steve Carver (2009)
12. Concepts and Techniques of Geographic Information Systems- Chor Pang Lo, Albert K.W. Yeung (2016

13 MN DeMers -Fundamentals of Geographic Information Systems

Web resources:

1. IIRS MOOC programme: https://isat.iirs.gov.in/mooc.php
2. https://webapps.itc.utwente.nl/librarywww/papers2009/general/principles gis.
3. https://www.geos.ed.ac.uk/~gisteac/gis_book_abridged/
4. https://www.usgs.gov/faqs/what-geographic-information-system-gis
5. https://www.sanfoundry.com/best-reference-books-fundamentals-geographic-information-systems.
6. https://www.google.com/search?q=Fundamentals+of+Geographic

DSC (8) -Lab

Digital Mapping Techniques in GIS

Content of the Practical Course		
Exercise 1	1. Getting familiar with datums and projections. 2. Georeference base maps (SOI Toposheet and Cadastral maps and others) 3. Geographical Transformation (WGS84 to UTM and UTM to WGS84) 4. Map, Map Scale, Precision and Accuracy of GIS data	**15**
Exercise 2	**Geospatial Data Creation** 1. Creation of Shape file and Geo databases 2. Digitization features such as settlements, roads, water bodies etc 3. Topographical corrections and rectification of errors 4. Validation of Spatial and non spatial data, QC/QA	**15**
Exercise 3	**Attribute management** 1. Working with Census Data 2. Working with GPS Data 3. Working Thematic Products (BHUVAN, KGIS, GSI; BHUKOSH)	**15**
Exercise 4	**Mapping and Visualization** 1. Symbolization of data 2. Mapping Elements 3. Thematic mapping and interpretation 4. Basis Geoprocessing tools and modeling	**15**

Reference:

1. An Introduction to Mapping Technologies By Patrick McHaffie, Sungsoon Hwang, Cassie Follett.
2. Gretchen N. Peterson GIS Cartography A Guide to Effective Map Design, Third Edition
3. United Nations New York, 2000-Handbook on geographic information systems and digital mapping
4. Science Direct- Using digital mapping techniques, cartographers can collect

and maintain an inventory ...
5. Gretchen N. Peterson GIS Cartography: A Guide to Effective Map Design
6. Bradley A. Shellito. Introduction to geospatial technologies
7. Victor Mesev. Integration of GIS and remote sensing
8. Diana Stuart Sinton and Jennifer J. Lund. Understanding place : GIS and mapping across the curriculum.
9. Otto Huisman and Rolf A .de by-principles **of** Geographic Information Systems

Web resources:

1. https://pubs.usgs.gov/of/2008/1385/pdf/ofr2008-1385.pdf
2. https://unstats.un.org/unsd/publication/seriesf/seriesf_79e.pdf
3. https://www.manage.gov.in › studymaterial › gis
4. https://www.sciencedirect.com › topics › digital-mapping
5. https://researchguides.dartmouth.edu/gis/books
6. https://webapps.itc.utwente.nl/librarywww/papers_2009/general/principlesgis.

Course Articulation Matrix-231645

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	1	-	1	-	2	-	1	1	-	2
CO2	2	-	1	-	2	-	2	-	2	-	-	2
CO3	2	1	1	1	1	-	2	-	-	-	-	2
CO4	2	1	1	-	1	-	2	-	-	--	-	2
Weighted Average	**2**	**0.50**	**1**	**0.25**	**1.25**	**-**	**2**	**-**	**0.75**	**0.25**	**-**	**2**

Internship

Semester: VI

Course Code: 23INTGEO01	**Course Title: -** Internship
Course Credits: 02	**Hours of Teaching/Week:** 3 Weeks in the end of semester
Total Contact Hours: 90 Hours Internship	**Formative Assessment Marks:** 50 Marks(C1=25+C2=25)

Note: This course will run as per the guidelines defined by the Committee represented by the University of Mysore, Mysuru and the same is approved by BoS, Geography, SBRR Mahajana First Grade College, Mysuru.

Course Outcomes (COs):

CO1: Integrate Theory and Practice of the area selected for Internship and to Explore Career Opportunities prior to Graduation.

CO2: Develop Communication, Interpersonal Skills, Work Habits and knowledge of the geography required for a job.

Course Articulation Matrix –23INTGEO01

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	2	2	3	3	3	3	3
CO 2	3	3	3	3	3	2	2	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**3**

Scheme of Evaluation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively for the semester. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

Assessment Criteria	Marks
Project Presentation Skills and Report - C1	25
Project Development Skills and Report - C2	25
Total	**50**

Scheme of Valuation for Practical Examinations- V & VI Semester

C1andC2areinternalteststobeconductedduring8thand16thweeksrespectivelyofthesemester. C3isthe semester-end examination conducted for $2\frac{1}{2}$Hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2.For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:
- Part-A Practical Exercises (C1): 05marks
- Part-B Practical Exercises (C2):05marks+Record: Marks10marks+ Case Study:05=25marks
- Thestudentisevaluatedfor25marksinC3asper the following scheme:

V Semester

Assessment Criteria	Marks
Thematic Maps/Remote Sensing	04
Arithmetic method/Sensor and Platform	04
Density Maps/Arial Photography	04
Maps Projections/Application of remote sensing	04
Drawing of Projection/Google maps	09
Total	**25**

VI Semester

Assessment Criteria	Marks
Identification Maps/Geographical Coordinates	04
Identify Mapping/Geodesy mathematics	04
Mapping sites/Data and Scale	04
Mapping of neighborhood/Geoprocessing	04
Mapping Areas/GIS Thematic Maps	09

Total	**25**

Continuous Formative Evaluation
Internal Assessment/Exams-V and VI Semester

Total marks for each course shall be based on continuous assessments and semester end examinations. The patterns 40:60 for IA and Semester end Theory Examinations respectively and 50:50 for IA and Semester end Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100Marks	50Marks
Continuous Assessment –1(C1)	20Marks	10Marks
Continuous Assessment –2(C2)	20Marks	15Marks
Semester End Examination(C3)	60Marks	25Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the courses and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, fieldwork, internship/industrial practicum/project work, quiz etc.
This assessment and process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th–19th week of the semester, a semester end examination shall be conducted by the college of each course. This for the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/ Principal in consultation with the concerned teacher shall decide about the genuine

emeses of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/ assignment /project work etc.

f) The outline for continuous assessment activities for Component-I(C1) and Component-II (C2) of a course Shall be as under:

	C1Marks	C2Marks	Total Marks
Session Test	10	10	20
Seminar/Presentation/Assignment/Activity	10	-	10
Case Study/Field Work/ Project Work/ Quiz etc.	-	10	10
Total	**20**	**20**	**40**

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the ratio is 25 (10+15):25).
- Conduct of Test, Seminar, Case study/ Assignment etc., can be either in C1or in C2 component as decided by the college and concerned department/ teacher.
- The teachers concerned shall conduct test/seminar/case study etc., the students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for in formation of the students.

h) The internal assessment marks shall be communicated to the conduct at least 10 days before the commencement of the examinations and the examinations shall be access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

DSC Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** $2\frac{1}{2}$ Hours

Instructions: Paper Setting

The Theory exam shall be conducted for 60 Marks and it consists of 3 Sections namely

- The Question Paper is divided into3 parts: Part–A, Part– B and Part- C
- Section A, Section B, Section C with internal choices. (Short, Medium and Long answer questions).
- Section A - Each question carries 2 marks and student has to answer 4 out of 6 questions.
- Section B - Each question carries 5 marks and student has to answer 4 out of 6 questions, and
- Section C - Each question carries 08 marks and student has to answer 4 out of 6 questions.

DSC Theory Question Paper Pattern

B.A GEOGRAPHY (For V and VI Semester) 2023 Onwards

Exam Duration: $2\frac{1}{2}$Hours **Max. Marks: 60**

Part-A

I. Answer any Four of the following questions. 2X4=08

1)……

2)……

3)……

4)……

5)……

6)……

Part-B

II. Answer any Four of the following questions. 5X4=20

7)……

8)……

9)……

10)……

11)……

12)……

Part –C

III. Answer any Four of the following questions. 8X4=32

13)……

14)……

15)……

16)……

17)……

18)……

DEPARTMENT OF HINDI

Motto/लक्ष्य

हिन्दी के माध्यम से एकता Unity Through Hindi

VISION/दृष्टि

निज भाषा उन्नति अहै,सब उन्नति को मूल।

बिन निजभाषा ज्ञान के, मिटत न हिय को सूल॥

Progress Through Language

MISSION/कार्य

- भाषा के शुद्ध एवं सही ज्ञान के साथ संप्रेषण क्षमता को बढाना।
- भाषा एवं साहित्य के विविध आयामों को विद्वानों के व्याख्यानों द्वारा समझाना।
- देश एवं समाज के प्रति सक्षम नागरिक बनाने की ओर कार्यरत रहना।

Program Outcomes (POs) for Bachelor of Science/Arts/Commerce/Managements/BCA

PO 1: Domain Knowledge

PO 2: Problem Analysis

PO 3: Design and Development of Solutions

PO 4: Investigation & Research

PO 5: Use of Modern Techniques/Tools

PO 6: Impact on Society

PO 7: Environment and Sustainability

PO 8: Moral and Ethical Values

PO 9: Individual and Team Work with Time Management

PO 10: Communication

PO 11: Project Management and Finance

PO 12: Life-long Learning

Objectives: HINDI LANGUAGE

Course Learning Outcomes

- Hindi was adopted as an official Language in Indian Constitution with Devanagari Script.
- Students are going to learn as a Language and they will know about Hindi Literature and writers of Hindi.
- Students will learn better Communication Skills through different types of Hindi Literature and Usage of Language.
- In the era of Globalization Students will get good opportunity for Livelihood through better Hindi Communicative Skills.
- By reading Hindi Literature Students will adopt moral values, life skills. Ethics.

- भारतीय संविधान ने देवनागरी लिपी में लिखित हिन्दी को राजभाषा के रूप में स्वीकृती दी है।
- विद्यार्थी हिन्दी को एक भाषा के रूप में अध्ययन करके अलग-अलग लेखकों के साहित्य पढ़ते हैं।
- तत्परिणाम भाषा के प्रयोग में नवीनता अपना सकते हैं और संप्रेषण की क्षमता बढाते हैं।
- वैश्वीकरण के संदर्भ में शुद्ध हिन्दी के प्रयोग एवं संप्रेषण की क्षमता के कारण विद्यार्थी अपने जीवन में अच्छे मौके पाते हैं।
- अलग-अलग लेखकों के विचार प्रधान लेख को पढ़ने के कारण पात्रों का विश्लेषण की पद्धती, नैतिक मूल्य, आदर्श,जीवन में अपनाने की प्रेरणा मिलती है।

List of BoS Members 2022-23

1	HoD	Shri Parameshwar Hegde	**Assistant Professor**	**Mahajana First Grade College**	**pggejjehegde@rediffmail.com** **9449679747**
2	Nominee by the Vice Chancellor	Dr.Vasanti M	**Prof in Hindi** **Department of Studies in Hindi Manasagangotri** **University of Mysore.**	**Department of Studies in Hindi Manasagangotri**	919611368670
3	Two Experts from Outside the University	1. Dr. Shridhar Hegde	**Prof in Hindi & Head of the Department**	**1.Department of Hindi** **Field Marshal K.M Kariyappa College Madikeri**	**Shridharhegde1970@gmail.com** **9449584354**
4		2. Shri.Padmanabha A.N	**Prof in Hindi & Head of the Department**	**2.D.V.S Arts and Science College Shivmogga.577201**	**Principal.dvscollege@gmail.com** **9611011509** **College-08182-278455**
5	Alumni	Shri.Pankaj Mishra	**MICA**	**Metagalli Industrial Area MYSORE**	**Pankajmishra33015@gmail.com**

Course Structure (NEP)

AECC (Hindi)

I Year

Course Type (AECC) NEP		HOURS/ WEEK		CREDITS			MARKS			Duration of Exam	Total Marks
							IA		EXAM		
		L	T	L	T	P	C1	C2	C3		
HINDI I SEM											
AECC−1	Hindi Kahani and grammar **B.Com/BBA (All) - 22HIN106**	**2**	**2**	**2:1:0**			**20**	**20**	**60**	**2½ Hours**	**100**
AECC-1	Hindi Kahani and grammar **BCA/BSc/BA - 22HIN107**										
HINDI II sem											
AECC-2	Hindi Gadya our Vyavaharik Hindi **B.Com/BBA (All) - 22HIN206**	**2**	**2**	**2:1:0**			**20**	**20**	**60**	**2½ Hours**	**100**
AECC-2	Hindi Kavita our Anuvad **BCA/BSc/BA - 22HIN207**										

AECC(1) HINDI Syllabus for B.Com/BBA(All)

Semester I **Course Code:** **22HIN106**	**Course Title:** AECC(1) Hindi Kahani and grammar (Theory)
Course Credits: 02 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials))
Total Contact Hours: 32 Hours (Theory) 32 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcomes (COs):

CO1: Knowledge of Short Stories as a form of Literature, familiarity with Socio-Economic disparity and identity good character trait for day to day life.

CO2: Accept divergent opinions to build strong intrapersonal Skills personality and professionally.

CO3: Understand the pluralistic nature of Society, respect other people's values and traditions to live in harmony.

CO4: Enhanced Skills in grammar for better LSRW (Listening, Speaking, Reading, and Writing.

Course Content:

Course Content Content	Hours
UNIT – 1	
प्रेमचन्द- परीक्षा. मोहन राकेश- मवाली धर्मवीर भारती- एक बच्ची की कीमत	**12**
UNIT – 2	
सुदर्शन- अलबम ममता कालिया-बोलने वाली औरत महीम सिंह- पानी और पुल	**14**

UNIT – 3	
भीष्म साहनी- चीफ की दावत जयप्रकाश कर्दम- नो बार	**12**
UNIT – 4	16
1.Varnamala,Varno ka bhed-svara,vyanjan,visarga. 2.Shabdha Vichar-Uthpathi, Vyutpathi,Prayog. hours 3.Sanjya-Paribhasha,bhed, 1 hour 4.Sarvanam- Paribhasha,bhed. 1 to 2 hours 5.Ling- Paribhasha, bhed.Shabho ke Ling Parivarthan. 6.Kirya- Paribhasha,bhed.Samrachana ke Aadhar per Bhed. 1 to 2 hours 7.Kal- Paribhasha,bhed. 1 to 2 hours	

Activity : विद्यार्थीयों को पाठ पढ़ाना, सप्ताह में एक दिन समाप्त किये गये पाठ का सार लिखकर कक्षा मे पढ़ना (संगोष्ठी),पाठ का संदेश लिखना, शुद्ध हिन्दी लिखना (कार्यशाला)। 10

Text Book: कहानी कुंज-सं-राजेन्द्र पोवार

Recommended Books :

- हिंदी व्याकरण- कामताप्रसाद गुरु – प्रभात प्रकाशन, दिल्ली
- हिंदी व्याकरण रचना –संपा- गो,मो. दाभोळकर, अशोक कामत- प्रकाशन- गुरुकुल प्रकाशन्न पुणे
- शिक्षार्थी व्याकरण- प्रो, नागप्पा- राजपाल एण्ड सन्स- दिल्ली
- https://www.youtube.com/watch?v=nrYr7Ipwqqs

Course Articulation Matrix – 22HIN106

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	2	1	1	1	2	1	3	2	3	1	2
CO 2	1	2	1	1	1	2	1	3	2	3	1	2
CO 3	1	2	1	1	1	2	1	3	2	3	1	2
CO 4	1	2	1	1	1	1	1	-	1	3	1	2
Weighted Average	**1**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**3**	**1**	**2**

AECC(1) HINDI Syllabus for BA/BCA/ BSc

Semester I **Course Code:** **22HIN107**	**Course Title:** AECC(1) Hindi Kahani and grammar
Course Credits: 02 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials))
Total Contact Hours: 32 Hours (Theory) 32 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcomes (COs):

CO1: Knowledge of Short Stories as a form of Literature, familiarity with Socio-Economic disparity and identity good character trait and gender sensitised..

.CO2: Appreciate the richness of Indian tradition:Understand the Psychological conflict and instill the spirit of nationalism.

CO3: Empathise with aged people and develop a more humane approach towards the needy.

CO4: Enhanced Skills in grammar for better LSRW (Listening, Speaking, Reading, and Writing.

Course Content:

Course Content Content	Hours
UNIT – 1	
चन्द्रधर शर्मा "गुलेरी"-बुद्धऊ का काँटा. प्रेमचन्द-पूस की रात, विश्वंम्बरनाथ शर्मा "कौशिक-ताई,	**12**
UNIT – 2	
जयशंकर प्रसाद-पुरस्कार, जैनेन्द्र-पाजेब, यशपाल- परदा.	**14**
UNIT – 3	
उषा प्रयंवदा-वापसी रांगेय राघव-पंच परेमेश्वर	**12**

UNIT – 4	16
1.Varnamala,Varno ka bhed-svara,vyanjan,visarga. 2.Shabdha Vichar-Uthpathi, Vyutpathi,Prayog. hours 3.Sanjya-Paribhasha,bhed, 1 hour 4.Sarvanam- Paribhasha,bhed. 1 to 2 hours 5.Ling- Paribhasha, bhed.Shabho ke Ling Parivarthan. 6.Kirya- Paribhasha,bhed.Samrachana ke Aadhar per Bhed. 1 to 2 hours 7.Kal- Paribhasha,bhed. 1 to 2 hours	

Activity : विद्यार्थीयों को पाठ पढ़ाना, सप्ताह में एक दिन समाप्त किये गये पाठ का सार लिखकर कक्षा मे पढ़ना (संगोष्ठी),पाठ का संदेश लिखना, शुद्ध हिन्दी लिखना (कार्यशाला)। 10

Text Book:कथा अष्टक-डॉ रीता गौड़

Recommended Books

- हिंदी व्याकरण- कामताप्रसाद गुरु – प्रभात प्रकाशन, दिल्ली
- हिंदी व्याकरण रचना –संपा- गो,मो. दाभोळकर, अशोक कामत- प्रकाशन- गुरुकुल प्रकाशन पुणे
- शिक्षार्थी व्याकरण- प्रो, नागप्पा- राजपाल एण्ड सन्स- दिल्ली
- https://www.youtube.com/watch?v=nrYr7lpwqqs

Course Articulation Matrix – 22HIN107

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	2	1	1	1	2	1	3	2	3	1	2
CO 2	1	2	1	1	1	2	1	3	2	3	1	2
CO 3	1	2	1	1	1	2	1	3	2	3	1	2
CO 4	3	2	1	1	1	1	1	-	1	3	1	2
Weighted Average	**1.5**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**3**	**1**	**2**

AECC(2) HINDI Syllabus for B.Com/BBA(All)

Semester II **Course Code:** **22HIN206**	**Course Title:** AECC(2) Hindi Gadya our Vyavaharik Hindi
Course Credits: 02 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials)
Total Contact Hours: 32 Hours (Theory) 32 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcomes (COs):

CO1: Familiarly with Socio-economic disparity, identity good character traits for character building.

CO2: Learn to accept divergent opinions to build strong intrapersonal skills personally and professionally.

CO3: Understand the pluralistic nature of Society; respect other people's values and live in harmony.

CO4: Enhance skills in usage of grammar for formal communication-both written and oral.

Course Content:

Course Content Content		Hours
UNIT – 1		
कहानी	-नमक का दारोगा -प्रेमचन्द	**12**
निबंध	-विज्ञापन युग,- मोहन राकेश	
	-नाखून क्यों बढते हैं? हजारी प्रसाद द्विवेदी	
UNIT – 2		
रेखाचित्र-वह चीनी भाई महादेवी वर्मा यात्रा वृत्तांत-गिरमिटियों के देश में प्रतिभामुदलियार संस्मरण-मदन मोहन मालवीय महात्मा गाँधी		**14**

UNIT – 3	
व्यंग्य-भगत की गत हरिशंकर परसाई एकांकी-महाभारत की एक सांझ-भरत भूषण अग्रवाल	**12**
UNIT – 4	16
पत्र व्यवहार 1.पत्र व्यवहार का सामान्य परिचय- गुण-लक्षण,पारिवारिक.व्यावहारिक, अ) सरकारी पत्र.(Personal) 2.व्यावहारिक पत्र- पूछ-ताछ, बैंक,बीमा, परिपत्र, 3. सरकारी पत्र–आवेदन पत्र-प्राचार्य को, सरकारी अधिकारियों को,	

Activity : विद्यार्थीयों को पाठ पढ़ाना, सप्ताह में एक दिन समाप्त किये गये पाठ का सार लिखकर कक्षा मे पढ़ना (संगोष्ठी),पाठ का संदेश लिखना, शुद्ध हिन्दी लिखना (कार्यशाला)। 10

Text Book: साहित्य सोपान-प्रो.प्रतिभामुदलियार

Recommended Books

- राजभाषा हिंदी राजकीय पत्रव्यवहार – डॉ. घनश्याम अग्रवाल, जयभारती प्रकाशन, माया प्रेस रोड, इलाहाबाद-3
- https://www.youtube.com/watch?v=7xUTguLaaXI

Course Articulation Matrix – 22HIN206

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	3	1	2
CO 2	2	2	1	1	1	2	1	3	2	3	1	2
CO 3	2	2	1	1	1	2	1	3	2	3	1	2
CO 4	3	2	1	1	1	1	1	-	1	3	1	2
Weighted Average	**2.25**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**3**	**1**	**2**

AECC(2) HINDI Syllabus for BA/BCA/BSc

Semester II **Course Code:** **22HIN207**	**Course Title:** AECC(2) **Hindi Kavita aur Anuvada Abhyas.**
Course Credits: 02 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials)
Total Contact Hours: 32 Hours (Theory) 32 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcomes (COs):

CO1: Awareness of the richness of Indian tradition and culture; Imbibe values for life-long character shaping.

CO2: Strong decision making skills with a vision for clear goal setting.

CO3: Insight into the current Socio-political and economic situation of the Society; reverence for struggle and sacrifice o the freedom fighters.

CO4: Ability to use learns skills as as mechanism for better communication; Adopt values in life for Harmonious living.

Course Content:

Course Content Content	Hours
UNIT – 1	
मैथिलीशरण गुप्त- भारत की श्रेष्ठता. सुमित्रानंदन पंत- बापू सूर्यकांत त्रिपाठी निराला- तोडती पत्थर.	**12**
UNIT – 2	
केदारनाथ अग्रवाल- यह धरती है उस किसान की हरिवंशराय बच्चन- पथ की पहचान सुभद्राकुमारी चौहान- झाँसी* की रानी	**14**
UNIT – 3	
भवानी प्रसाद मिश्र- गीतफरोश नागार्जुन- प्रेत का बयान	**12**

Unit-4	16
Translation -अनुवद अभ्यास- 1.अनुवाद शब्द की व्युत्पत्ती.अनुवाद का अर्थ, परिभाषा, 4 2.अनुवद के प्रकार–१ . गद्यत्व-पद्यत्व,साहित्यिक विधा,विषय,अनुवाद की प्रकृती के आधार पर.4 3.अनुवाद-हिन्दी से अंग्रेजी/ अंग्रेजी से हिन्दी, single sentence, Paragraphs . पारिभाषिक शब्दावली. 4	

Activity : विद्यार्थीयों को पाठ पढ़ाना, सप्ताह में एक दिन समाप्त किये गये पाठ का सार लिखकर कक्षा मे पढ़ना (संगोष्ठी),पाठ का संदेश लिखना, शुद्ध हिन्दी लिखना (कार्यशाला)। 10

Text Book: पद्य चयन-Ed- **Sushama Agraval**

Recommended Books :

- Anuvaad Vigyan- Bholanatha Tiwari, Shabdkar, Delhi,110092
- Anuvaad kala-Kuch vichar- by Anand Prakash Khemani, S.Chand & Co., New Delhi.
- Anuvaad Siddhant aur samsyayen: R.N.Srivastav and K.K. Goswami, Alok Prakashan, Delhi.
- https://www.youtube.com/watch?v=68MiLy_-VOc

Course Articulation Matrix – 22HIN207

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	3	1	2
CO 2	2	2	1	1	1	2	1	3	2	3	1	2
CO 3	2	2	1	1	1	2	1	3	2	3	1	2
CO 4	3	2	1	1	1	1	1	-	1	3	1	2
Weighted Average	**2.25**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**3**	**1**	**2**

Continuous Formative Evaluation/Internal Assessment (AECC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY
TOTAL MARKS	100
Continuous Assessment – 1 (C1)	20
Continuous Assessment – 2 (C2)	20
Semester End Examination (C3)	60

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.
b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.
c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.
d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.
e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.
f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1	C2	TOTAL
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
TOTAL	20	20	40

• Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.

• The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

QUESTION PAPER PATTERN
For Ability Enhancement Compulsory Course
B.Com., B.B.A, BBA(H&H) BBA (Avi &Int.Tour) B.C.A, B.SC, B.A.,
Text Book-40 Marks.
Grammar-20 Marks

Max Marks 60 Exam Duration-2.30Hours

Qn. No.	Particulars		Marks	Total
	SECTION – A			
I	Objective Type Questions (Compulsory) From Grammar only	10 out of 10	01	10
II	Reference to Context From Text Book only 1. 2. 3. 4.	2 out of 4	05	10
	SECTION – B			
III	Short Answer Questions (From Text Book) 1. 2. 3.	2 out of 3	05	10
IV	Short Answer Questions From Grammer/Prayojanamulak) 1. 2. 3.	2 out of 3	05	10
	SECTION – C			
V	Essay type Answer Questions From Text Book only	2 out of 4	10	20
	Total			**60**

Mahajana Education Society
Education to Excel
SBRR Mahajana First Grade College (Autonomous)
Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

Department of Hindi

Date: 08.09.2022

As Per NEP-2020 Proposed Syllabi for 2022-23

Members of the Board of Studies

The Board of Studies meeting of **HINDI** (UG) was held on **08.09.2022** The following Board members were present.

Sl. No.	Name	Signature with date
1	Sri. PARAMESHWAR HEGDE	
2	Smt. RESHMA	ABSENT
3	Dr.VASANTI.M	Vasanthi. M
4	Dr. SHRIDHAR HEGDE	
5	Sri PADMANABHA A V	
6	Sri. PANKAJ MISHRA	

Place : MYSURU

Date: 08.09.2022

Signature of the Chairperson
Chairperson
BOS/BOE in Hindi
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru-570 012

DEPARTMENT OF HINDI

Motto/लक्ष्य

हिन्दी के माध्यम से एकता Unity Through Hindi

VISION/दृष्टि

निज भाषा उन्नति अहै,सब उन्नति को मूल।

बिन निजभाषा ज्ञान के, मिटत न हिय को सूल॥

Progress Through Language

MISSION/कार्य

- भाषा के शुद्ध एवं सही ज्ञान के साथ संप्रेषण क्षमता को बढाना।
- भाषा एवं साहित्य के विविध आयामों को विद्वानों के व्याख्यानों द्वारा समझाना।
- देश एवं समाज के प्रति सक्षम नागरिक बनाने की ओर कार्यरत
  रहना।

Program Outcomes (POs) for Bachelor of Science/Arts/Commerce/Managements/BCA

PO 1: Domain Knowledge

PO 2: Problem Analysis

PO 3: Design and Development of Solutions

PO 4: Investigation & Research

PO 5: Use of Modern Techniques/Tools

PO 6: Impact on Society

PO 7: Environment and Sustainability

PO 8: Moral and Ethical Values

PO 9: Individual and Team Work with Time Management

PO 10: Communication

PO 11: Project Management and Finance

PO 12: Life-long Learning

Objectives: HINDI LANGUAGE

Course Learning Outcomes

- Hindi was adopted as an official Language in Indian Constitution with Devanagari Script.
- Students are going to learn as a Language and they will know about Hindi Literature and writers of Hindi.
- Students will learn better Communication Skills through different types of Hindi Literature and Usage of Language.
- In the era of Globalization Students will get good opportunity for Livelihood through better Hindi Communicative Skills.
- By reading Hindi Literature Students will adopt moral values, life skills. Ethics.

- भारतीय संविधान ने देवनागरी लिपी में लिखित हिन्दी को राजभाषा के रूप में स्वीकृती दी है।
- विद्यार्थी हिन्दी को एक भाषा के रूप में अध्ययन करके अलग-अलग लेखकों के साहित्य पढ़ते हैं।
- तत्परिणाम भाषा के प्रयोग में नवीनता अपना सकते हैं और संप्रेषण की क्षमता बढाते हैं।
- वैश्वीकरण के संदर्भ में शुद्ध हिन्दी के प्रयोग एवं संप्रेषण की क्षमता के कारण विद्यार्थी अपने जीवन में

  अच्छे मौके पाते हैं।
- अलग-अलग लेखकों के विचार प्रधान लेख को पढ़ने के कारण पात्रों का विश्लेषण की पद्धती, नैतिक मूल्य, आदर्श,जीवन में अपनाने की प्रेरणा मिलती है।

List of BoS Members 2022-23

1	HoD	Shri Parameshwar Hegde	**Assistant Professor**	**Mahajana First Grade College**	**pggejjehegde@rediffmail.com** **9449679747**
2	Nominee by the Vice Chancellor	Dr.Vasanti M	**Prof in Hindi** **Department of Studies in Hindi Manasagangotri** **University of Mysore.**	**Department of Studies in Hindi Manasagangotri**	919611368670
3	Two Experts from Outside the University	1. Dr. Shridhar Hegde	**Prof in Hindi & Head of the Department**	**1.Department of Hindi** **Field Marshal K.M Kariyappa College Madikeri**	**Shridharhegde1970@gmail.com** **9449584354**
		2. Shri.Padmanabha A.N	**Prof in Hindi & Head of the Department**	**2.D.V.S Arts and Science College Shivmogga.577201**	**Principal.dvscollege@gmail.com** **9611011509** **College-08182-278455**
4	Alumni	Shri.Pankaj Mishra	**MICA**	**Metagalli Industrial Area MYSORE**	**Pankajmishra33015@gmail.com**

Course Structure (NEP)

AECC (Hindi)

II YEAR

Course Type, Code and Name		HOURS/ WEEK		CREDITS			MARKS			Duration of Exam	Total Marks
							IA	EXAM			
		L	T	L	T	P	C1	C2	C3		
HINDI III SEM											
AECC-3	हिन्दी कविता + सरकारी पत्राचार, पारिभाषिक, शब्दावली . **B.Com/BBA(All) - 22HIN306**	**2**	**2**	**2:1:0**			**20**	**20**	**60**	**2½ Hours**	**100**
AECC- 3	हिंदी नाटक साहित्य +संचार माध्यम और हिंदी **BCA/BSc/ BA - 22HIN307**										
HINDI IV sem											
AECC-4	हिंदी नाटक साहित्य +संचार माध्यम और हिंदी **B.Com/BBA(All) - 22HIN406**	**2**	**2**	**2:1:0**			**20**	**20**	**60**	**2½ Hours**	**100**
AECC-4	हिंदी गद्य + सरकारी पत्राचार, शब्दावली पारिभाषिक, **BCA/BSc/ BA - 22HIN407**										

AECC (3) HINDI Syllabus for B.Com/BBA(All)

Semester III **Course Code:** **22HIN306**	**Course Title:** AECC(3) हिन्दी कविता + सरकारी पत्राचार, पारिभाषिक, शब्दावली
Course Credits: 02 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials))
Total Contact Hours: 32 Hours (Theory) 32 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcomes (COs):

CO1: Awareness of the richness of Indian tradition and culture; Imbibe values for life-long character shaping.

CO2: Strong decision making skills with a vision for clear goal setting.

CO3: Insight into the current Socio-political and economic situation of the Society; reverence for struggle and sacrifice o the freedom fighters.

CO4: Ability to use learns skills as as mechanism for better communication; Adopt values in life for Harmonious living.

Course Content:

Course Content Content	Hours
UNIT – 1	
मैथिलीशरण गुप्त- भारत की श्रेष्ठता. सुमित्रानंदन पंत- बापू सूर्यकांत त्रिपाठी निराला- तोडती पत्थर.	**12**
UNIT – 2	
केदारनाथ अग्रवाल- यह धरती है उस किसान की हरिवंशराय बच्चन- पथ की पहचान सुभद्राकुमारी चौहान- झाँसी* की रानी	**14**
UNIT – 3	

भवानी प्रसाद मिश्र- गीतफरोश नागार्जुन- प्रेत का बयान	**12**
UNIT – 4	16
सरकारी पत्राचार - सरकारी पत्र व्यवहार और पारिभाषिक शब्दावली. 1.सरकारी पत्र व्यवहार का सामान्य परिचय- गुण-लक्षण, सरकारी पत्र के विभिन्न प्रकार, अ) सामान्य सरकारी पत्र, आ) परिपत्र, इ) कार्यालय ज्ञापन ई) प्रेस-विज्ञप्ति और प्रेस नोट	

Activity : विद्यार्थीयों को पाठ पढ़ाना, सप्ताह में एक दिन समाप्त किये गये पाठ का सार लिखकर कक्षा मे पढ़ना (संगोष्ठी),पाठ का संदेश लिखना, शुद्ध हिन्दी लिखना (कार्यशाला) ।

10

Text Book: पद्य संचयन-सुष्मा अग्रवाल

Recommended Books :

- राजभाषा हिंदी राजकीय पत्रव्यवहार – डॉ. घनश्याम अग्रवाल, जयभारती प्रकाशन, माया प्रेस रोड, इलाहाबाद-3
- अभिनव व्यावहारिक हिन्दी-डॉ.परमानन्द गुप्त.विद्या मंदिर. बेंगलूर-२.
- https://www.youtube.com/watch?v=iW-1sCzWHNM
- https://www.youtube.com/watch?v=5qnjlpP7i70

Course Articulation Matrix – 22HIN306

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	3	1	2
CO 2	2	2	1	1	1	2	1	3	2	3	1	2
CO 3	2	2	1	1	1	2	1	3	2	3	1	2
CO 4	3	2	1	1	1	1	1	-	1	3	1	2
Weighted Average	**2.25**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**3**	**1**	**2**

AECC(3) HINDI Syllabus for BA/BCA/BSc

Semester III **Course Code: 22HIN307**	**Course Title:** AECC(3) **Hindi Natak aur** Sanchar Madyam our Hindi
Course Credits: 02 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials
Total Contact Hours: 32 Hours (Theory) 32 Hours (Tutorials	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcomes (COs):

CO1: Understand the concept of drama and process of dramatics to pursue acting as a career.

CO2: Obtain Knowledge of Indian art, architecture, heritage and historical events.

CO3: Imbibe good morals and values to shape as a better humanbeing with rationale thinking.

CO4: Equipped with skills of communicative Hindi for various digital and non-digital platforms.

Course Content:

Course Content Content	Hours
UNIT – 1	
Chaper I of the Drama	**12**
UNIT – 2	
Chaper II of the Drama	**14**
UNIT – 3	
Chaper III of the Drama	**12**

UNIT – 4	16
संचार माध्यम और हिंदी 1 to 02 Hours -संचार माध्यम प्रस्तावना, 1 to 02 Hours - परिभाषा, स्वरूप 1 to 02 Hours - भेद (प्रकार) एवं महत्व, 1 to 02 Hours -उद्धेश्य. 1 Hour - संचार भाषा के रूप में हिन्दी 1 to 02 Hours -संचार माध्यमों से जनता पर प्रभाव. 1 to 02 Hours	

Activity : विद्यार्थीयों को पाठ पढ़ाना, सप्ताह में एक दिन समाप्त किये गये पाठ का सार लिखकर कक्षा मे पढ़ना (संगोष्ठी),पाठ का संदेश लिखना, शुद्ध हिन्दी लिखना (कार्यशाला) ।

10

Text Book:कोणार्क-जगदीश चन्द्र माथुर

Recommended Books :

- पत्रकारिता की विविध विधआएँ- डॉ. राजकुमार श्रीवास्तव- जयभारती प्रकाशन, माया प्रेस रोड, इलाहाबाद-
- व्यावसायिक संप्रेषण- अनुपचंद भयानी- प्रकाशक- राजपास एण्ड सन्स, दिल्ली
- संचार,सूचना,कप्यूटर और प्रयोजनमूलक हिन्दी जगत-डॉ.एम.वासन्ती-जवाहर पुस्तकालय,मथुरा-281001.
- https://www.youtube.com/watch?v=IWf2lnPiwb8
- https://www.youtube.com/watch?v=OlbtgjVBVcw
- https://www.youtube.com/watch?v=Vgcb9TIS-2w
- https://www.youtube.com/watch?v=1YrhckUjdtI

Course Articulation Matrix – 22HIN307

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	3	1	2
CO 2	2	2	1	1	1	2	1	3	2	3	1	2
CO 3	2	2	1	1	1	2	1	3	2	3	1	2
CO 4	3	2	1	1	1	1	1	-	1	3	1	2
Weighted Average	**2.25**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**3**	**1**	**2**

AECC(4) HINDI Syllabus for B.Com/BBA(All)

Semester IV **Course Code: 22HIN406**	**Course Title:** AECC(4) **Hindi Natak aur** Sanchar Madyam Aur Hindi
Course Credits: 02 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials
Total Contact Hours: 32 Hours (Theory) 32 Hours (Tutorials	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcomes (COs):

CO1: Grasp about Enacting Drama, one should become the actor, Knowing Great Indian Traditions and Heritage .Art and Architecture. Culture. Believes. Character Building, Analyze and adopt the good Character in the life, Develop a New Ideas. Inculcate Communication Skills.

CO2: Patriotism, Selfish character in the society. Ability to take right Decisions.

CO3: Dramatic turn in the life. Delicacy, Study of Indian Historical events and Hummanity.

CO4: Usage of Communicative Hindi in Different Digital Non digital Platforms.

Course Content:

Course Content Content	Hours
UNIT – 1	
Chapter I of the Drama	**12**
UNIT – 2	
Chapter II of the Drama	**14**
UNIT – 3	
Chapter III of the Drama	**12**

UNIT – 4	16
संचार माध्यम और हिंदी 1 to 02 Hours -संचार माध्यम प्रस्तावना, 1 to 02 Hours - परिभाषा, स्वरूप 1 to 02 Hours - भेद (प्रकार) एवं महत्व, 1 to 02 Hours -उद्धेश्य. 1 Hour - संचार भाषा के रूप में हिन्दी 1 to 02 Hours -संचार माध्यमों से जनता पर प्रभाव. 1 to 02 Hours	

Activity : विद्यार्थीयों को पाठ पढ़ाना, सप्ताह में एक दिन समाप्त किये गये पाठ का सार लिखकर कक्षा मे पढ़ना (संगोष्ठी),पाठ का संदेश लिखना, शुद्ध हिन्दी लिखना (कार्यशाला)। 10

Text Book:कोणार्क-जगदीश चन्द्र माथुर

Recommended Books :

- पत्रकारिता की विविध विधआएँ- डॉ. राजकुमार श्रीवास्तव- जयभारती प्रकाशन, माया प्रेस रोड, इलाहाबाद-
- व्यावसायिक संप्रेषण- अनुपचंद भयानी- प्रकाशक- राजपास एण्ड सन्स, दिल्ली
- संचार,सूचना,कप्यूटर और प्रयोजनमूलक हिन्दी जगत-डॉ.एम.वासन्ती-जवाहर पुस्तकालय,मथुरा-281001.
- https://www.youtube.com/watch?v=IWf2InPiwb8
- https://www.youtube.com/watch?v=OIbtgjVBVcw
- https://www.youtube.com/watch?v=Vgcb9TlS-2w
- https://www.youtube.com/watch?v=1YrhckUjdtI

Course Articulation Matrix – 22HIN406

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	3	1	2
CO 2	2	2	1	1	1	2	1	3	2	3	1	2
CO 3	2	2	1	1	1	2	1	3	2	3	1	2
CO 4	2	2	1	1	1	1	1	-	1	3	1	2
Weighted Average	**2**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**3**	**1**	**2**

AECC(4) HINDI Syllabus for BA/BCA/BSc

Semester IV **Course Code: 22HIN407**	**Course Title:** AECC(4) **Hindi Gadya aur Sarakari Patra.**
Course Credits: 02 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials
Total Contact Hours: 32 Hours (Theory) 32 Hours (Tutorials	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60 (Theory)

Course Outcomes (COs):

CO1: Familiarly with Socio-economic disparity, identity good character traits for character building.

CO2: Learn to accept divergent opinions to build strong intrapersonal skills personally and professionally.

CO3: Understand the pluralistic nature of Society; respect other people's values and live in harmony.

CO4: Using this as a tool for any type of Communication through Hindi. and Capacity to lead the life.

Course Content:

Course Content Content	Hours
UNIT – 1	
कहानी-1.नमक का दारोगा 3 hours 2.गैंग्रिन-3 3.रानी माँ का चबुतरा- 3	**12**
UNIT – 2	
रेखाचित्र-काळया 3 यात्रा वृत्तांत-जहाँ आकाश नहीं दिखाई देता 3 संस्मरण-यशपाल 'बडा ठोस आदमी है' 3	**14**

UNIT – 3	
व्यंग्य-तथागत नई दिल्ली में 3 एकांकी-महाभारत की एक सांझ 3	**12**
UNIT – 4	16
सरकारी पत्राचार - सरकारी पत्र व्यवहार और पारिभाषिक शब्दावली. 1.सरकारी पत्र व्यवहार का सामान्य परिचय- गुण-लक्षण, सरकारी पत्र के विभिन्न प्रकार, अ) सामान्य सरकारी पत्र, आ) परिपत्र, इ) कार्यालय ज्ञापन 2. सरकारी पत्र-आवेदन पत्र-प्राचार्य को, सरकारी अधिकारियों को, 1 to 02 Hours	

Activity : विद्यार्थीयों को पाठ पढ़ाना, सप्ताह में एक दिन समाप्त किये गये पाठ का सार लिखकर कक्षा मे पढ़ना (संगोष्ठी),पाठ का संदेश लिखना, शुद्ध हिन्दी लिखना (कार्यशाला) ।

10

Text Book:साहित्य सोपान- प्रो. प्रतिभा मुदलियार

Recommended Books

- राजभाषा हिंदी राजकीय पत्रव्यवहार – डॉ. घनश्याम अग्रवाल, जयभारती प्रकाशन, माया प्रेस रोड, इलाहाबाद-3
- अभिनव व्यावहारिक हिन्दी-डॉ.परमानन्द गुप्त.विद्या मंदिर. बेंगलूर-२.
- https://www.youtube.com/watch?v=iW-1sCzWHNM
- https://www.youtube.com/watch?v=5qnjlpP7i70

Course Articulation Matrix – 22HIN407

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	3	1	2
CO 2	2	2	1	1	1	2	1	3	2	3	1	2
CO 3	2	2	1	1	1	2	1	3	2	3	1	2
CO 4	2	2	1	1	1	1	1	-	1	3	1	2
Weighted Average	**2**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**3**	**1**	**2**

Continuous Formative Evaluation/Internal Assessment (AECC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY
TOTAL MARKS	100
Continuous Assessment – 1 (C1)	20
Continuous Assessment – 2 (C2)	20
Semester End Examination (C3)	60

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.
b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.
c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.
d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.
e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.
f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1	C2	TOTAL
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
TOTAL	20	20	40

• Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.

• The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

QUESTION PAPER PATTERN
For Ability Enhancement Compulsory Course
B.Com., B.B.A, BBA(H&H) BBA (Avi &Int.Tour) B.C.A, B.SC, B.A.,
Text Book-40 Marks.
Grammar-20 Marks

Max Marks 60 Exam Duration-2.30Hours

Qn. No.	Particulars		Marks	Total
	SECTION – A			
I	Objective Type Questions (Compulsory) From Grammar only	10 out of 10	01	10
II	Reference to Context From Text Book only 1. 2. 3. 4.	2 out of 4	05	10
	SECTION – B			
III	Short Answer Questions (From Text Book) 1. 2. 3.	2 out of 3	05	10
IV	Short Answer Questions From Grammer/Prayojanamulak) 1. 2. 3.	2 out of 3	05	10
	SECTION – C			
V	Essay type Answer Questions From Text Book only	2 out of 4	10	20
	Total			**60**

Mahajana Education Society
Education to Excel
SBRR Mahajana First Grade College (Autonomous)
Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

Department of Hindi

Date: 08.09.2022

As Per NEP-2020 Proposed Syllabi for 2022-23

Members of the Board of Studies

The Board of Studies meeting of **HINDI** (UG) was held on **08.09.2022** The following Board members were present.

Sl. No.	Name	Signature with date
1	Sri. PARAMESHWAR HEGDE	
2	Smt. RESHMA	ABSENT
3	Dr.VASANTI.M	Vasanthi. M
4	Dr. SHRIDHAR HEGDE	
5	Sri PADMANABHA A V	
6	Sri. PANKAJ MISHRA	

Place : MYSURU

Date: 08.09.2022

Signature of the Chairperson
Chairperson
BOS/BOE in Hindi
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru-570 012

Education Society (R)
Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA

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BOARD OF STUDIES (BoS)

DEPARTMENT OF History

UG ☑

PG ☐

NEP Syllabi for I and II Semester BA-History

2021-22

DEPARTMENT OF History

Motto

History for future

Vision

Orienting the students to imbibe
Indian Culture and values through History

Mission

- To organize field visits to Historical places, Historical monuments, Excavation Sites, History museums, Conservation laboratory etc, which provides experiential learning.

- To take up special projects like conservation of monuments, heritage buildings etc.

- To organize exhibitions related to numismatics and philately

- To organize special lectures remembering National leaders, Martyrs and renowned personalities.

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Jayalakshmipuram, Mysuru - 570 012

Name of the Degree program: BA **Discipline Course: History**

POs	Programme Outcomes (POs)
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Department of History

List of Board of Studies Members-2021-22

Sl.No.	Name	Designation
1	**Mr. Dr. Sreedhara H** HoD & Assistant Professor SBRR Mahajana First Grade College (Autonomous), Jayalakshmipuram, Mysuru Email: sreedharah79@gmail.com **Cell: +91 9901041470**	**Chairperson**
2	**Dr. Dharmesha A.G.** Assistant Professor SBRR Mahajana First Grade College (Autonomous) Jayalakshmipuram, Mysuru dharmasourave@gmail.com **Cell: +91 9538245434**	**Member**
3	**Dr. K. Sadashiva** Prof & Chairman DOS History,Manasagangothri, Mysore sadashivak@gmail.com **Mobile : +91 9886153778**	**VC Nominee**
4	**Prof. Shashidhar B.R.** Assistant Professor Dept. of History Govt. First Grade College Madikere, Kodagu District. shashidharvalnur@gmail.com **Mobile : +91 9945915343**	**Expert from other University**
5	**Mrs. Shashikala A.S.** Assistant Professor Dept. of History Govt. First Grade College Chennapatna, Ramanagara Dist. shashidraj@gmail.com **Mobile : +91 8618430156**	**Expert from other University**
6	**Dr.Gavi Siddaiya** Divisional Archives Office, No.15/D, 2nd stage, V.V. Nagar, Mysuru **Mobile : +91 9448739096**	**Expert from Industry/Corporate Sector**

Course Structure& Pattern of Examination- B.A. (History) 2022-23

[As per NEP – 2020 Guidelines]

FIRST SEMESTER

Course Type & Code	Title of the Course	Hours / week	Credits	Max. Marks				
				IA		Exam	Exam Duration	Total Marks
			L:T:P	C1	C2	C3		
DSC-1 211129	Introduction to Ancient World Civilizations	3	**3:0:0**	20	20	60	$2\frac{1}{2}$	100
DSC-2 211130	History of Ancient India (From Earliest times to 1206 CE)	3	**3:0:0**	20	20	60	$2\frac{1}{2}$	100
OE-1	Cultural Heritage of India 21OEHIS101 OR Introduction to Archaeology 21OEHIS102	3	**3:0:0**	20	20	60	$2\frac{1}{2}$	100

SECOND SEMESTER

Course Type & Code	Title of the Course	Hours / week	Credits	Max. Marks				
				IA		Exam	Exam Duration	Total Marks
			L:T:P	C1	C2	C3		
DSC-1 211229	Introduction to Medieval World Civilizations	3	**3:0:0**	20	20	60	$2\frac{1}{2}$	100
DSC-2 211230	History of Medieval India (1206-1761)	3	**3:0:0**	20	20	60	$2\frac{1}{2}$	100
OE-2	Cultural Heritage of Karnataka 21OEHIS201 OR Manuscriptology 21OEHIS202	3	**3:0:0**	20	20	60	$2\frac{1}{2}$	100

DEPARTMENT OF HISTORY

NEP (CBCS) Syllabus for I & II Semester

(Effective from Academic Year 2021-22)

Four years Integrated Honours Degree Program in History to be introduced under NEP

BA Semester-1

DSC-1 **Course Code : 211129**

Course Title: Introduction to Ancient World Civilizations	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

CO1. Acquire knowledge of Ancient Civilizations across the world and geographical influences which aided the establishment of these Civilizations.

CO2. Analyze and Trace the evolution of political history, socio-economic characteristics of the different Civilizations and the ideas of theocracy and statehood during this time.

CO3. Acquire knowledge of various contributions in the fields on religion, law, education, language, literature, science mathematics, art and architecture.

BA Semester-1

DSC-1 **Course Code : 211129**

Title of the Course: Introduction to Ancient World Civilizations

Course-1		**Course-2**	
Number of Theory Credits	**Number of lecture hours/ semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	39 or 42	3	39 or 42

Content of Course-1	**39/42 Hrs**
Unit-1 : Mesopotamian, Egyptian and Chinese Civilizations	**13/14**
Introduction: Geographical Formation and Early Man Origin and Stages of the Earth – Geological Formation of World – Evolution of Human Species	02

Chapter-1 : Mesopotamian Civilization Geographical Background - From Neolithic to Bronze Age. **Sumerians** – Race - Political History of the Sumerians - Kings and Governments of Sumer **The Akkadians** - Old Babylonian Empire - Hammurabi and his Code - The Kassite domination - Attacks from the Hittites - The New Babylonian Empire – King Nebuchadnezzar and the Days of Babylonian Glory - The Decline of Babylon **The Assyrian Empire** - The reforms of Tiglathpileser III - Decline of Assyrians - The decline of Mesopotamian civilization Social condition - Economic Condition -–Theocratic State - Cultural contributions of Mesopotamians - Religion - Law – Education - Language and Writing–Literature - Art and Architecture - Hanging Garden - Science and Mathematics – Astronomy - Development of Calendar – Medicine	04
Chapter-2 : Egyptian Civilization Egypt – The Gift of Nile - Cultural Transition from Neolithic to Bronze Age Political History of Egyptian Civilization - Intermediate Periods - The New Kingdom or the Period of Empire (1560-1087 BCE) - The downfall of Egypt - Social Condition - Economic Condition – Agriculture – Industry – Trade – Cultural contributions of Egyptians - Writing and Literature – Games – Education - Religion- Akhenaton and his Monotheism - Art and Architecture	04
Chapter-3 : Chinese Civilization Early dynasties – The State – Decline of Ancient China – Economy and Society – Occupations – Art and Crafts – Ancestor Worship and Oracles – Script – Solar-Lunar Calendar - Literature	04
Unit – II : Greek, Roman Civilizations	**13/14**
Chapter-4 : Greek Civilization Geographical influences on the Greek City States - Polity – Socio-Economic Background - Class Conflict between Aristocracy and Peasantry: Process of Reforms - Transition to Democracy - Conflict with Persia: Delian League (478 BCE) - The Peloponnesian War (431-404 BCE) - The End of the Classical Period Social Conditions - Slavery in Ancient Greece: Economy and Society - Position of Women Economic Conditions – Agriculture – Crafts - Maritime Commerce – Taxation. Cultural contributions of Ancient Greece – Philosophy - Literature and Drama - Scientific Approach – Mathematics – Medicine - Astronomy – Religion – Olympic Games - Art and Architecture	05
Chapter-5 : Roman Civilization (Early Part)	04

The founding of Rome City - Rome under Monarchy - The Assembly and the Senate - The Roman Republic - The Roman Expansion. Political Structure and Society during the Roman Republic - Effects of the Roman Expansion on commoners - Struggle between Patricians and Plebeians - Last Hundred Years of the Republic - Anti-Rome upheavals - Professional Army and War Lords - Rise of Dictatorship in Rome – Julius Caesar	
Chapter-6 : Roman Principate and Empire Augustus Caesar and His Successors –Diocletian and Constantine- The decline of the Western Roman Empire Social Condition of the early Roman Empire - Social Structure of the Later Roman Empire - Status of Roman Women – Slavery -Economic Condition – Judicial System Cultural Contributions – Language – Philosophy and Literature - Religion in Ancient Rome - Judaism - Christianity - Art and Architecture - Sculpture - Painting- Coins and medals	05
Unit-III : Iranian, Early American and African Civilizations	**13/14**
Chapter-7 : Iranian Civilization Early History - Achaemenid Empire – Sassanid Empire – Economic and social Life – Religion – Art and Culture	05
Chapter-8 : Early American Civilizations Mayan Civilization – Astronomy – Calendar Making -The Aztecs -The Incas – The Olmec – Culture – Religion – Art - Decline.	04
Chapter-9 : Early African Civilizations The Kingdom of Kush – Kingdoms of Nubia and Aksum – Sudanic Kingdoms – Civilizations of the Bantu Peoples – Kingdom of Kongo- Lunda Empire.	04

Suggested Readings:

1. Austin, M. M., The Hellenistic World from Alexander to the Roman conquest, Cambridge, 1981.
2. Algaze, Guillermo., Ancient Mesopotamia at the dawn of Civilisation: The Evolution of an Urban Landscape, University of Chicago Press, Chicago, 2009.
3. Badian, E., Studies in Greek and Roman History, Oxford University Press, 1964.
4. Badian, Ernst., Roman Imperialism in the Late Republic, Oxford, 1967.
5. Edward MacNall Burns and others, World Civilisations, Vol. A, GOYL SaaB Publishers & Distributors, Delhi, 2011.
6. Ferrero, Guglielmo., Characters and Events of Roman History, Barnes & Noble Books, New York, 1909.
7. Keith Bradley and Paul Cartledge, ed., The Cambridge World History of Slavery, vol. 1, Cambridge University Press, New York, 2011.
8. Nissen, Hans J., The Early History of the Ancient Near East, 9000-2000 BC, University of Chicago Press, Chicago, 1988.
9. Pollock, Susan., Ancient Mesopotamia: the Eden that never was, Cambridge University Press, Cambridge, 1999.

10. Potter, David S, ed., A Companion to the Roman Empire, Blackwell, Oxford and London, 2006.
11. Sharma. S.R., A Brief Survey of Human History, Hind Kitabs Ltd, Bombay, 1963.
12. Rakesh Kumar, Ancient and Medieval World, From Evolution of Humans to the Crisis of Feudalism, Sage Publications India Pvt Ltd, New Delhi, 2018.
13. Roux, George., Ancient Iraq, Penguin, London, 1992
14. Scarre, C., and Brian M. Fagan., Ancient Civilisations, Routledge, New York, 2016.
15. Sharma. S.R., A Brief Survey of Human History, Hind Kitabs Ltd, Bombay, 1963.
16. Shaw, Ian, ed., The Oxford History of Ancient Egypt, Oxford University Press, 2000.
17. Trigger, Bruce G., Understanding Early Civilisations, Cambridge University Press, 2003.
18. Wenke, Robert, The Ancient Egyptian State: The Origins of Egyptian Culture, c8000-2000 BCE, Cambridge University Press, Cambridge, 2009

Course Articulation Matrix - 211129

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	1	2	3	1	-	2
CO2	3	1	1	-	1	2	1	2	2	1	1	2
CO3	3	1	1	-	-	2	1	2	3	1	1	2
Weighted Average	**3**	**1**	**1**	**1**	**1**	**2**	**1**	**2**	**2.66**	**1**	**1**	**2**

BA Semester-1

DSC-2 **Course Code : 211130**

Course Title: History of Ancient India (From Earliest Times to 1206 CE)	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

CO1. Gain an extensive insight of the political developments in Ancient India and familiar with development of Human Evolution and Material Culture in the Indian sub-continent.

CO2. Analyze sources in different forms to study the history of Ancient India. Capture a glimpse of the evolving socio- cultural and religious diversities and dissents of Ancient India.

CO3. Understand the progress of early State formations and political structures in Ancient India.

BA Semester-1

DSC-2 **Course Code : 211130**

Course Title: History of Ancient India (From Earliest Times to 1206 CE)

Content of Course-1	**39/42 Hrs**
Unit-1 : Pre Historic Culture to Nandas	**13/14**
Introduction Survey of Sources - Archaeological and literary sources Geographical Factors and their Impact.	02
Chapter-1 : Pre Historic Cultures in India Early Man in India – Paleolithic Ages –Mesolithic Cultures –Neolithic Culture – Growth of Villages from Baluchistan to Western Uttar Pradesh and Gujarat - Important sites- Bhimbetka, Daimabad, Isampur, Adichanallur , Chandravalli	03
Chapter-2 : The Indus Civilisation Origin and Chronology of the Indus Civilisation - Early Indus Cultures –Extent and Population – Agriculture and Subsistence – Agriculture and Crafts –Trade. Culture: Writing, Art, Religion– Social and Political Structure – Later Harappan Phase – End of the Indus Civilisation	03
Chapter-3 : The Vedic and Later Vedic Age Vedas as a Historical Source – Varna in the Rig Vedic Period – Religion: Sacrifices to the Gods –Coronation Rituals – Rajasuya and Ashwamedha - Later Vedic Age – The Emergence of Monarchy - Polity in Vedic Period -Gana-Samudaya- Sabha, Samiti and Vidata.	03
Chapter-4 : The Age of Mahajanapadas to the Nandas Mahajanapadas- Republican States and their functioning – Political Conflicts and the Growth of the Magadhan Empire -The Nandas – Foregin Invasions on India –	03

Persians and Macedonians - Alexander‟s Invasion The Religious Revolution **-** The Intellectual Ferment – Ajivikas – Jainism – Buddhism – Brahminism- Doctrines and Contributions.	
Unit – II : The Age of Empire	**13/14**
Chapter-5 : The Mauryan Empire Sources - Chandragupta Maurya - Ashoka – Ashoka‟s Dhamma – Political Philosophy of Mauryans – Arthashastra of Kautilya - Central and Provincial Administration - Revenue and Finance – Internal and Foreign Trade – Industries – Social Conditions – Ashoka‟s Edicts – Language – Literature – Art and Architecture	07
Chapter-6 : Post - Mauryan India: 200 BCE – 300 CE The Political History of North India – The Shungas – Kanvas - Indo-Greeks – The Shaka-Pahlavas–The Kushanas – Kanishka –Gandhara Art and Mathura school of Art- Shatavahana Empire in Deccan.	04
Chapter-7 : The Sangam Age Polity under early Cheras, Cholas and Pandyas – Sangam Literature – The Sangam Government – Central and Local Self Government	03
Unit-III : Guptas and their Successors	**13/14**
Chapter-8 : The Guptas and Their Successors (CE 300–CE 750) Rise of the Gupta Dynasty - Chandragupta I – Samudragupta and Allahabad Prasasti - Chandragupta II – Administrative Structure -Central and Provincial Administration Economy and Society-Indian Feadalism Political Development in Deccan and North India: The Vardhanas – Harshavardhana Administration, Religion- Buddism- Education (Nalanda University) Political Development in South India: Pallavas – Mahendra Varma, Narasimha Varma – Cholas - Raja Rajachola- I, Rajendra chola, local self-government - Art and Architecture of Pallavas and Cholas.	09
Chapter-9 : The Rajputs Chauhans– Paramaras –Chandellas – Polity, Administration and Art & Architecture.	03
Maps for Study : I.Mauryan Empire under Ashoka II. Kushana Empire under Kanishka III.Gupta Empire under Samudragupta IV.Vardhana Empire under Harshavardhana	01
Important Historical Places: 1.Sanganakallu 2. Lothal 3.Kalibangan 4.Bimbetka 5. Harappa 6. Mahenjodharo 7.Purushapura 8.Gandhara 9. Allahabad 10.Kanauj 11. Shravanabelagola 12.Kausambi 12.Rajagriha 13.Ujjaini 14.Pataliputra 15.Bodhagaya 16. Delhi 17.Nalanda 18. Tarain 19.Kalibangan 20.Prayaga	01

Suggested Readings:

1. Irfan Habib - People‟s History of India Series (Vols 1- 7)
2. Upinder Singh - A History of Ancient and Early Medieval India
3. Chakrabarthi Dilip K- A History of Indian Archaeology from beginning to 1947
4. S. Piggott - Prehistoric India
5. R.S. Sharma- Ancient India
6. RomilaThapar - Ancient India
7. D.D. Kosambi - The Culture and Civilisation of Ancient India in Historical Outline.
8. K.A. NilakantaSastri - A History of South India
9. V. N. HariRao - History of India Vol. I
10. S. R. Sharma - Comprehensive History of India
11. V. A. Smith - The Oxford History of India
12. R.S. Tripathi- History of Ancient India
13. Dr. Sreedhara H- History of Ancien India.

Web Links:

1. **https;//rgu.ac.in**
2. **https;//www.ahandfulofleaves.org**
3. **https;//nizamcollege.ac.in**
4. **https;//www.coreknowledge.org**
5. **https;//www.researchgate.net**

Course Articulation Matrix - 211130

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	-	1	1	2	1	2	1	1	-	2
CO2	3	1	1	1	1	2	1	2	1	1	2	2
CO3	3	-	1	1	-	2	1	2	2	1	1	2
Weighted Average	**3**	**1**	**1**	**1**	**1**	**2**	**1**	**2**	**1.33**	**1**	**1.5**	**2**

BA Semester-1
Open Elective

OE-1

Course Code: 21OEHIS101

Course Title: Cultural Heritage of India	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

- **CO1.** Provide an insight about an extensive survey of heritage of India and familiarize oneself with Indian history and culture
- **CO2.** Expertize to analyse further development of culture of India and the factor responsible for origin and decline of culture
- **CO3.** Provide the opportunity to understand the process of cultural development

BA Semester-1
Open Elective

OE-1

Title of the Course: Cultural Heritage of India

Content of Course-1	**39/42 Hrs**
Unit-1 : Introduction	**13/14**
Chapter-1 : Cultural Heritage Meaning – Definitions – Concepts – Characteristics – Types of Indian Cultural Heritage – Tangible and Intangible – Significance of Cultural Heritage in Human Life – Cultural Zones of India	05
Chapter-2 : Fairs, Festivals and Rituals Ethnic Indian Cultural Construct – Significance and Historical background of Fairs, Festivals and Religious Rituals – Regional – Folk – Tribal – National – Monsoon Fairs - Animal Fairs – Jatres.	05
Chapter-3 : Pilgrimage Centres of India Kashi – Mathura– Rameshwara – Bodh Gaya– Amarnatha, Vaishnodevi, Nanjangud and Madurai.	04
Unit – II : Legends, Narratives and Cultural Ethos	**13/14**
Chapter-4 : Meaning – Significance – Forms and Traditions of Legends Puranic Legends – Tradition of Cultural Heritage: Ramayana and Mahabharata – Ancient Fables of Ethical and Moral Values: Panchatantra and Jataka Stories.	04
Chapter-5 : Traditional Performing Arts Indian Aesthetics – Important Sources: Bharata‟s Natyashastra - Kitab –i- Navaras by Ibrahim Adil Shah II – Indian Classical Dances: Bharatanatyam – Kathakali –	06

Mohiniyattam – Kuchipudi – Odissi – Manipuri Dance. **Theatre:** Sanskrit Plays – Kutiyattam as a specimen of Oral and Intangible Cultural Heritage **Oral Tradition and Performing Arts** – Bhajan, ,Harikatha, Vedic Chants, Gurbani- Yakshagan, Bootaaradane.	
Chapter-6 : Indian Classical Music **Sources** - Two Major Traditions: Hindustani and Carnatic Music - Historically Important Personalities of Indian Classical Music: Amir Khusrow, Tansen, Mohammad Shah "Rangeela", Purandaradasa and Kanakadasa– M.S. Subbulakshmi – Bhimasen Joshi.	04
Unit-III : Architecture and Built Heritage	**13/14**
Chapter-7 : Indian Architecture The Beginnings – Indus Valley: Town Planning – Mauryan Architecture: Characteristics, Palaces and Pillars – Stupa Architecture – Important Stupas – Rock Cut -Architecture: Caves and Temples – Temple Architecture: Nagara, Dravida and Vesara Styles– Mughal Architecture – Colonial Architecture	06
Chapter-8 : Important Monuments of North India (Study of Historical and Cultural Sites through maps) Nalanda, Ajanta, Ellora, Prayaga, Dwaraka, Sun Temple -Konark, Khajuraho, Agra –TajMahal, Delhi – Red Fort,	04
Chapter-9 : Important Monuments of South India Shore Temple (Mahabalipuram), Aihole, Badami, Pattadakal, Hampi, Kanchi, Nagarjunakonda, Amaravati, Tanjore.	04
Historical Places: **1**. Pushkar **2.** Prayaga **3.**Shravanabelagola **4.** Ajmer **5.**Amritsara **6.**Delhi **7.**Kashi **8.**Nalanda **9.**Ajanta **10.**Dwarka **11.**Puri **12.**Konark **13.**Khajurahoo **14.**Tiruvanathapuram **15**.Ellor **16.**Mah**a**balipuram **17.**Pattadakal**l**u **18.**Hampi **19.**Kanchi **20.**Nagarjunakonda	

Note: Historical Tour and Preparation of Project Report based on field work is Mandatory

Suggested Readings:

1. K.T Acharya - Indian food: A Historical Companion, oxford University Press, 1998.
2. Banga, I. (ed). - The City in Indian History : Urban Demography, Society and Politics, Delhi, Manohar, 1991
3. A.L Basham - The wonder that was India. Picador Publisher, Indian ed. 2014
4. N.K Bose - Culture Zones of India" in culture and Society in India, Asia publishing House 49
5. S.Narayan - Indian Classical Dances, Shubhi Publications, 2005.
6. Prakash, H.S - Shiva - Traditional Theatres, Incredible India Series, New Delhi, 2007
7. S. Radhakrishnan - Culture of India" in the Annals of the American Academy of Political and Social Science, Vol 233, India Speaking (May 1944).pp 18-21.
8. K. Thapiyal , S. Shukla - Sindhu Sabhyataien, Luckhnow,2003 The Director General Survey of India (ed.), Guide Books: World Heritage Series, New Delhi

9. Shashi Tiwari - Origin of Environmental Science from Vedas. A Research paper presented at the National Seminar on" Science and Technology" in Ancient Indian Text, Special Centre for Sanskrit Studies. JNU, 9-10th, January, 2010
10. Raman Varadara - Glimpses of Indian Heritage, Popular Prakashan Private Ltd., Bombay, 1989
11. Varapande, M.L - History of Indian Folk Theatre (Lok Ranga Panorama of Indian Folk Theatre) Abhinav Publications,1992
12. V. Vasudev - Fairs and Festivals, Incredible India series, 2007
13. A. Sundara (Ed.) - Kannada Vishaya Vishvakosha Ithihasa mattu Puratatva
14. H. Tipperudraswamy - Karnataka Samskruti Sameekshe
15. Janapada Vishya Viswakosha Vol- I and II Prasaranga University of Mysore
16. Rangacharya - The Natya shastra, English translation with critical Notes, New Delhi, Munshiram Manoharlal Publishers Pvt ltd.

Course Articulation Matrix - Course Code: 21OEHIS101

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	1	3	2	1	1	2
CO2	3	1	-	1	-	2	1	2	1	1	-	2
CO3	2	1	1	1	1	2	1	2	1	1	1	2
Weighted Average	**2.66**	**1**	**1**	**1**	**1**	**2**	**1**	**2.33**	**1.33**	**1**	**1**	**2**

BA Semester-1
Open Elective

OE-1

Course Code: 21OEHIS102

Course Title: Introduction to Archaeology	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

- **CO1.** Understand the concept of Archaeology as an ancillary for study of history and the various features of Archaeology in understanding history
- **CO2.** Familiarize with the scope of Archaeology. Understand the various tools and techniques imbibed in Archaeology
- **CO3.** Study various schools of disciplines of Archaeology.

BA Semester-1
Open Elective

OE-1

Title of the Course: Introduction to Archaeology

Content of Course-1	39/42 Hrs
Unit-1 : Introduction	**13/14**
Chapter-1 : Definition of Archeology Its Aims and Scope : difference between History and Archeology	07
Chapter-2 : Kinds of Archaeology – Ethno -Marine and Salvage	07
Unit – II : Archaeology by Period	**13/14**
Chapter-3 : Lower Paleolithic Middle Paleolithic – Upper Paleolithic – Mesolithic – Neolithic - Chalcolithic – Bronze age – Iron Age	06
Chapter-4 : Archaeology in India William Jones, James Princep, Alexander Cunningham, John Marshall, Sir Mortimer Wheeler, Allchin, H. D. Sankalia, S.R.Rao. M. H. Krishna**.**	06
Chapter-5 : Archaeological Survey of India – Department of Archaeology Government of Karnataka	02
Unit-III : Exploration, Excavation and Analysis	**13/14**
Chapter-6 : Identification of a site – field survey – sampling techniques – Application of Scientific methods.	04
Chapter-7 : Methods of Excavation – vertical and horizontal – Trenching -Gridding	02

Chapter-8 : Excavation of burial mounds – Open Stripping – Quadrant method – Excavation of pits – Excavation of a typical site	04
Chapter-9 : Visit to Local Archaeological Sites and Preparation of Field Study Report for Assignment is Mandatory	04

Suggested Readings:

1. Agrawal D.P - Archaeology in India
2. Aiken M.J - Science based dating in archaeology
3. Allchin Bridget
4. & Raymond Allchin - Rise of Civilisation in India and Pakistan
5. Atkinson RJC - Field Archaeology
6. Basker .P - Techniques of Archaeological Excavation
7. Chakrabarthi D.K - A History of Indian Archaeology from the Beginning to 1947
8. Chakrabarthi D.K - Theoretical Perspectives in Indian Archaeology
9. Gosha .A - Encyclopedia of Indian Archaeology
10. Rajan .K - Archaeology, Principles and Methods
11. Raman K.V - Principles and Methods in Archaeology
12. Dr.Srinivas V Padigar - Principles of Archaeology.
13. Dr Srinivas V Padigar - Puratattva Parichaya-(Kan)
14. Sundara (Ed.) - Kannada Vishaya Vishvakosha Ithihasa mattu Puratattva
15. Srikanta Shastri - Puratattva Shodane

Course Articulation Matrix - Course Code: 21OEHIS102

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	2	1	2	2	1	1	2
CO2	2	1	1	1	1	2	1	2	2	1	1	2
CO3	2	-	1	-	-	3	1	3	1	1	1	2
Weighted Average	**2**	**1**	**1**	**1**	**1**	**2.33**	**1**	**2.33**	**1.66**	**1**	**1**	**2**

BA Semester-2

DSC-3 **Course Code : 211229**

Course Title : Introduction to Medieval World Civilization	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

CO1. Understand the geographic limitations and advantages that contributed to the rise of different civilizations in the medieval world.

CO2. Get information on the development of religious traditions and organizations in the medieval world and understand the growth of Feudalism and European towns in the middle ages.

CO3. Indicate the causes and impact of the Crusades in the Medieval Europe. Derive the influences of Oriental Civilizations on Medieval Europe. Illuminate the aspects of Economy and its development in Medieval Western Europe.

BA Semester-2

DSC-3 **Course Code : 211229**

Course Title : Introduction to Medieval World Civilizations

Content of Course-1	**39/42 Hrs**
Unit-1 : Arab and Persian Civilizations	**13/14**
Introduction to Medieval World Civilizations Introduction – „Medieval‟ – Terminology and Periodization – Transitions and Historical Debates	02
Chapter-1 : Arab Civilization Introduction - Arab on the Eve of the rise of Islam - Birth of Islam – Origin and Spread of Islam - The Doctrines of Islam The Caliphate State / The Arab Empire - Rashidun Caliphs - The Umayyad Caliphate -The Abbasid Caliphate. Arab contributions to Medieval World - Islamic Religious Traditions - Scholarship and Learning –Mathematics –Chemistry-Medicine-Paper and Bookmaking -Adab Literature –Philosophy -Art and Architecture	04
Chapter-2 : Persian Civilization (Iranian Civilization) Introduction – Early History - Muslim Conquest of Persia – Conquest of Persia (642–651) - Second and last Muslim invasion – Persian rebellion and reconquest Persia under Muslim rule – Administration – Religion - Language of Persia – Urbanisation	04
Chapter-3 : Persian Civilization - Safavid Dynasty - Shah Abbas the Great - Shah and his Achievements – Political - Shah and his Achievements - Cultural Persia„s Cultural Contributions - Fine Arts - Carpet Weaving – The Art of the Book	04

Making – Ceramics – Literature – Architecture	
Unit – II : European Civilisations	**13/14**
Chapter-4 : The Middle Ages in Europe (Political and Social Development) – Introduction - Successors Kingdoms to the Western Roman Empire –Germanic Foundations of Early Medieval Europe. Europe in the Early Middle Ages (Political and Economic Institutions of Medieval Europe) - The Rise of Frankish Empire - Merovingian Period – Carolingian Period - Charlemagne (768-814) - New States in Response to Invasions - Otto the Great (936-973) - The Holy Roman Empire	05
Chapter-5 : The Age of Feudalism in Europe - Origin or Development of Feudalism - Feudal Polity and Economy - Decline of Feudalism	04
Chapter-6 : Religious Developments in Medieval Europ –Saintly & Virgin Mary Cults - Monasticism in Europe - Organization of the Church & Growth of Papacy.	04
Unit-III : The Middle Ages in Europe	**13/14**
Chapter-7 : Byzantine Empire - Constantine (306-337 CE) – Justinian (482-565 CE) - Decline of Byzantine Empire - Achievements of the Byzantium Empire - Effective Diplomacy - Trade and Commerce – Agriculture – Religious Reforms - Revival of Greek Classical Literature - Architecture and Art	04
Chapter-8 : Crusades Introduction - The Crusades - Causes for the Crusades - Pope,,s call for Crusade – Crusades 1st to 9th - Crusades and Their Impact.	04
Chapter-9 : Growth of Economy and Culture in Medieval Western Europe Growth of European Towns - Growth of Middle Class - Early Medieval European Economy - The first Agricultural Revolution - Expansion of Trade and Commerce in Medieval Europe - Guild System Contributions of Medieval Europe - Intellectual and Cultural Life in Medieval Europe - Medieval European universities - Growth of Western Scientific and Speculative Thought - Literature – Drama – Music - Art and Architecture	04

Suggested Readings:

1. Arthur Hassall, (ed), General History of Europe, Oxford, 1901.
2. Edward MacNall Burns and others, World Civilisations, Vol. A, GOYL SaaB Publishers & Distributors, Delhi, 2011.
3. Holt. P.M., Ann K.S.Lambton and Bernard Lewis, The Cambridge History of Islam, Vol.1, Cambridge University Press, 1970.
4. Israel Smith Clare, Medieval History of the World, vol. I and II, Arihant Publishing House, Jaipur, 2008.
5. Lars Brown worth, Lost to the West – The Forgotten Byzantine Empire, Random House Inc., New York, 2009.
6. Rahman A, Islam on Science and Technology.
7. Rakesh Kumar, Ancient and Medieval World, From Evolution of Humans to the Crisis of Feudalism, Sage Publications India Pvt Ltd, New Delhi, 2018.
8. Ferrero, Guglielmo., Characters and Events of Roman History, Barnes & Noble Books, New York, 1909

Course Articulation Matrix - 211229

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	2	1	2	1	2	1	1	1	2
CO2	2	2	1	1	2	2	1	2	1	1	1	2
CO3	2	-	1	1	1	2	1	2	1	1	1	2
Weighted Average	**2**	**1.5**	**1.33**	**1.33**	**1.33**	**2**	**1**	**2**	**1**	**1**	**1**	**2**

BA Semester-2

DSC-4 **Course Code : 211230**

Course Title : History of Medieval India (1206-1761)	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

CO1. The students will get the knowledge of the political history of Delhi Sultanate, Mughals and Marathas. To analyze the changes in state and society under the Delhi Sultanates with respect to their administrative structure and theory of state/kingship of the Delhi Sultanate.

CO2. Understand the critical historiographical approaches on the State and also the Decline of the Delhi Sultans and Mughal Empire. To understand the fusion of art, architecture, literature, language and fine arts in medieval India under Islamic and Hindu styles.

CO3. To understand the significance of the Bhakti and Sufi Movements and their impact on the socio-cultural sphere.

BA Semester-2

DSC-4 **Course Code : 211230**

Course Title :History of Medieval India (1206-1761)

Content of Course-1	39/42 Hrs
Unit-1 : Arab, Turks and Delhi Sultanate	**13/14**
Chapter-1 : Sources of Medieval Indian History Source - Literary, Foreign accounts and Archaeological sources.	02
Chapter-2 : Advent of Arabs and Turks in Medieval India Political condition of India in the Beginning of 8th Century – Arab Invasion – Muhammud Bin Qasim – Rise of Turks –The invasions of Muhammud of Ghazni and Ghori and their Impact – Tarain Wars	04
Chapter-3 : Foundation of the Delhi Sultanate Qutubud din Aibak – Razia as sultan- Era of Balban –- Early Life and accession, Theory of kingship, Achievements. Khalji dynasty – AlauddinKhalji – Conquests – Administrative measures. Mohammad bin Tughlaq – Experiments and Reforms – Firoz Shah Tughlaq and his Administrative reforms. The Later Tughlaqs – Decline of the Delhi Sultanate.	08
Chapter-4 : State-Polity, Society and Economy under the Delhi Sultanates Central and Provincial Administration – Economy –Slavery under the Delhi Sultans.	**02**

Unit – II : The Mughal Empire	13/14
Chapter-5 : The Foundation of the Mughal Empire Babar and Humayun – Revival of Afghan Power – Sher Shah Suri– The Second Battle of Panipat and triumph of the Mughals – Akbar's rise and consolidation of power – Conquests, Rajput Polilcy, Religious Policy – (Din-Ilahi) – Revenue Administration- Mansabdari Sysem– Jahangir, Shah Jahan and Aurangazeb – Religious Policy, Deccan policy – Revolts and reaction- Decline of Mughal Empire.	06
Chapter-6 : Administration and Economy under the Mughals Mughal Administration –Central, Provincial, Local – Theory of Kingship – Mansabdari System – Jagirdari System – Sources of Revenue – Military – Judicial System – Development in Trade and Industries.	04
Chapter-7 : Society and Culture under the Mughals Social structure under Mughals – Religion and Celebration – development of Science, Literature, Art, Architecture and Painting.	04
Unit-III : Bhakti and Sufi Movements	**10/08**
Chapter-8 : Bhakti and Sufi Movements in India The Bhakti Movement– Alvars – Nayanars Basavanna – Kabir – Meera Bai – Guru Nanak – Causes for the popularity of the Movement – Impact of the Bhakti Movement – The Sufi Movement – Shaik Nizamudin Auliya – Salim Chisti	06
Chapter-9 : The Marathas Rise of Maratha Power under Shivaji –Peshwas Rule– Third Battle of Panipat 1761	04
Maps for Study: i. Khilji Empire under AllauddinKhilji ii. Tughlaq Empire under Muhammad Bin Tughlaq iii. Mughal Empire under Akbar iv. Maratha Empire under Peshwas/ Shivaji	01
Important Historical Places Delhi, Agra, Panipat, Fatehpur-Sikri, chittor, Gwalior, Udaipur, Kalinjar, Surat, Kanauj, Amarkot, Ayodhya, Ranthamboor, Devagiri, Dwarasamudra, Madurai, Srinagar, Sasaram, Raigar, Warangal, Poona, Lahore.	01

Suggested Readings:

1. A.L.Srivastava : Delhi Sultanate, Shiv LalAgarwal& Co. Agra, Reprint, 2017.
2. A.L.Srivastva : the Mughal Empire (Shiv LalAgarwal& Co., Agra, Reprint, 2017.
3. Sharma S.R., the Crescent in India (Agra 1933)
4. Srivastava A.L., Medieval Indian culture (Agra 1975)
5. Sharma L.P, The Sultanate of Delhi (Delhi, 1996)
6. Edwards S.M.& Garratt, Mughal rule in India (New Delhi 1974)
7. Banerjee A.C, A New History of Medieval India (New Delhi, 1983)
8. Lane Poole S, Medieval India under Muhammadan rule (London)
9. Majumdar R.C. (ed), History and Culture of the Indian people, Vol.V& VI (bhavan's Series)
10. Majumdar R.C. (ed), BharatiyaJanateyaIthihasaMattuSamskriti (bhavan's Series)
11. Sathish Chandra, History of Medieval India, Vol. I and Vol. 2.
12. IrfanHabib, Medieval India.

13. B.N.S. Yadav : Society and Culture in North India in the 12th century. RakaPrakashanPrayagraj, 2012.
14. B.P. Majumdar: socio-Economic History of Northern India, Firma K.L. Mukhopadhyaya (1960)
15. Herman Kulke (ed), The State in India (1000-1700), OUP, 199516. Ishwari Prasad: Medieval India 4th ed., Digitize 2006.
16. J.N.Sarkar: Life and Times of Shivaji, Orient Blackswan Pvt., Ltd., New Delhi, 2010.
17. K.N.Chitnis : Socio- Economic History of Medieval India, Atlantic Publishers, 2018.
18. Majumdar, Rayachaudhary&Dutt : An Advanced History of India, Laxmi Publications, 2016.
19. Mohammad Habib and K.A. Nizami, (ed): Comprehensive History of India, Vol.V, The Delhi Sltanate, PPH, 1992.
20. R.C.Majumdar& others (ed): The History and culture of the Indian People Vol. 6 the Delhi Sultanate, bhartiyaVidyaBhawan, 2006.
21. R.P.Tripathi :Rise and fall of the Mughal Empire SurjeetPublictions, 2012.
22. S.r.Sharma : the Crescent in India: A Study in Medieval History, bhartiya Kala Prakashan, 2005.
23. IshwariPrasad : A short History of Muslim Rule in India, Surjeet Publications, 2018.
24. Satish Chandra – Medieval India From Sultanate to the Mughals.
25. Dr. Sreedhara H- History of Medieval India.

Web Links:

26. https;//www.sscadda.com
27. https;//www.khansir.co.in
28. https;//old.mu.ac.in
29. https;//www.nios.ac.in
30. https;//jobscaptain.com

Course Articulation Matrix- 211230

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	2	3	1	3	1	1	-	2
CO2	3	1	2	1	-	2	1	3	1	1	1	2
CO3	3	1	-	1	1	3	1	3	1	1	1	2
Weighted Average	**3**	**1**	**1.5**	**1**	**1.5**	**2.66**	**1**	**3**	**1**	**1**	**1**	**2**

BA Semester-2

Open Elective

OE-2

Course Code: 21OEHIS201

Course Title : Cultural Heritage of Karnataka	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

CO1. Understand the concept of cultural heritage of Karnataka and study of various cultural factors which influence the flow of culture in society.

CO2. Analyze the factors responsible for formation of pluralistic society.

CO3. Understand the concept "Unity in Diversity".

BA Semester-2
Open Elective

OE-2

Title of the Course: Cultural Heritage of Karnataka

Content of Course-1	39/42Hrs
Unit-1 : Introduction	**13/14**
Chapter-1 : Cultural Heritage Meaning – Definitions – Concepts – Characteristics – Types of Indian Cultural Heritage – Tangible and Intangibl– Significance of Cultural Heritage in Human Life – Cultural Zones of Karnataka.	03
Chapter-2 : Fairs, Festivals, Rituals Ethnic Indian Cultural Construct – Significance and Historical background of Fairs, Festivals and Religious Rituals – Jatres: Mylarlinga, Mudukutore, Suttur – Dasara, Deepavali, Nagarapanchami, Bangalore Karaga.	04
Chapter-3 : Piligrimage Centres of Karnataka Nanjangudu, Malemahadeshwara Betta, Dharmasthala, Shravanabelagola, KukkeSubramanya..	04
Unit – II : Legends, Narratives and Cultural Ethos	**13/14**
Chapter-4 : Meaning – Significance – Forms and Traditions of Legends Puranic Legends –Traditions of Cultural Heritage : Ramayana and Mahabharatha – Ancient Fables of Ethical and Moral Values: Panchatantra and Vaddakatha.	04
Chapter-5 : Traditional Performing Arts-Dravidian aesthetics **Folk Dances and Theatre – Important Folk Dances** Lavani, Kolata, Doddata etc. **Oral Tradition and Performing Arts** Bhajane, Harikatha, Yakshagana, Bootaaradane.	05

Unit-III : Architecture and Built Heritage	13/14
Chapter-7 : Karnataka Architecture The Beginnings – Influence of Mauryan Art and Architecture – Inscriptions–Temple Architecture : Nagara, Dravida and Vesara Styles – Islamic Architecture – Colonial Architecture.	05
Chapter-8 : Important Monuments of North Karnataka (Study of Historical and Cultural sites through maps) Badami, Ihole, Pattadakallu, Hampi, Bijapur (Vijayapura) etc.	04
Chapter-9 : Important Monuments of South Karnataka Halebidu, Beluru, Somanathapura, Talakadu, Mysuru, Nandi etc.	04

Note: Historical Tour and Preparation of Project Report abased on field work is Mandatory.

Suggested Readings:

1. S.Settar - PrakritaJagadvalaya
2. A.Sndara (Ed) - Kannada VishayaVishvakoshaIthihasamattuPuratatva
3. K.R.Basavaraja - History and Culture of Karnataka
4. P.B. Desai - A History of Karnataka
5. A.Sundra (Ed.) - Karnataka Charitre, Vol. I.
6. B.SurendraRao (ed) - Karnataka CharitreVol.II
7. S.Setter - Halagannada: Bhashe, BhashaVikasa, BhashaBandhavya
8. M.Chidananda Murthy - Karnataka ShasanagalaSamskrutikaAdhyayana
9. S. Rajashekara - Karnataka Architecture
10. K.A.NilakataSastri - A History of South India
11. H.Tipperudraswamy - Karnataka SamskrutiSameekshe.

Course Articulation Matrix - Course Code: 21OEHIS201

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	-	-	-	-	3	1	3	1	1	-	2
CO2	3	-	-	-	-	3	1	3	1	1	-	2
CO3	2	-	-	-	-	2	1	2	1	1	-	2
Weighted Average	**2.66**	**-**	**-**	**-**	**-**	**2.66**	**1**	**2.66**	**1**	**1**	**-**	**2**

BA Semester-2
Open Elective

OE-2

Course Code: 21OEHIS202

Course Title : Manuscriptology	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

CO1. Understand the importance of manuscripts. Manuscripts as an ancillary for study of history, and the concept of cataloguing of manuscripts.

CO2. Practice the Science of conservation and preservation of manuscripts.

CO3. Visit Libraries and Achieves to study conservation and preservation.

BA Semester-2
Open Elective

OE-2

Title of the Course: Manuscriptology

Content of Course-1	39/42 Hrs
Unit-1 : Introduction	**13/14**
Chapter-1 : Cultural Heritage Meaning – Definitions –Characteristics – Scope and Importance	04
Chapter-2 : Types of Manuscripts Methods of Study – Writing Materials – Palm Leaf, Kadtatas (Black Book)	05
Unit – II : Collection	**13/14**
Chapter-3 : History of Manuscriptology	05
Chapter-4 : Introduction of Indian Manuscriptology	04
Chapter-5 : Manuscripts in Kannada, Tigalari, Samskrita, Pali, Tamil/Grantha, Tulu, Nandinagari and Modi	05
Unit-III : Editing	**13/14**
Chapter-6 : Collection of Manuscripts – Oriental Research Institute, Mysore, Melukote	03
Chapter-7 : Process of Editing	05
Chapter-8 : Preservation of Manuscripts – Regional Conservation Laboratory	06
Chapter-9 : Visit to Oriental Research Institute and Regional Conservation Laboratory Mysore, Academy of Sanskrit Research Centre, Melukote. Visit to Oriental Research Centres – Preparation Field Study Report for Assignment is Mandatory**.**	05

Suggested Readings:

1. ChintharChakravathi - Study of Manuscriptology
2. M.V.Seetharamaih& M.Chidananda Murthy - HastipratiSastra
3. N. Geethacharya - HastipratiSastraadhyayana
4. SitharamJahagirdarParichaya - Kannada GranthaSampadhanaSastra
5. S. Jagannath - GranthaSampadanaShastra
6. Devarakondareddy - LipiyaHuttumattuBelavanige
7. MadhavanaKatti - PipishastraPravesha
8. B.S.SanayaSoochi - Kannada Hasta Prathigala Micro film
9. T.V.VenkatachalaSastry - HalayaHonnu
10. A.K.Sashtri - SringeriKadathagalu
11. S.ShankarappaToranagallu - LipiNiguda

Course Articulation Matrix- Course Code: 21OEHIS202

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	-	1	1	1	1	1	-	2
CO2	2	1	1	1	1	1	-	1	2	1	1	2
CO3	2	1	1	1	1	1	-	1	2	1	1	2
Weighted Average	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1.66**	**1**	**1**	**2**

Pedagogy and Assessment Pattern for All DSC and OE Papers

Pedagogy

- Lecture Method – Class Room Teaching
- Learning Through Project work
- Collaborative learning strategies
- Use of Resources like Audio- Visual aids, Films, Documentaries
- Visit to Historical Sites, Museums etc.
- ICT Supplemented Teaching
- Seminars/ Guest/ Special Lectures
- Group Discussions

Modes of Assignment

- Individual Assignments
- Project work
- Written Test
- Documentaries

Assessment:

Weightage for assessments (in percentage)

Formative Assessment		
Internal Assessment		**Theory Part Semester End Examination**
Internal Test	10	60
Assignment / Book Review	10	
Seminar with Group Discussion	10	
Viva Voice	10	
Total	**40**	
Grand Total		**100**

PATTERN OF QUESTION PAPER FOR

I & II SEMESTER EXAMINATION

2021-22

SCHEME OF EXAMINATION
B.A- History (NEP)
(DSCC & OPEN ELECTIVE with 3 Credits)
I and II Semester of B.A., (C1-20, C2-20, C3-60 Total=100 Marks)

SCHEME OF EXAMINATION for 100 Marks
(Each paper shall have two components)

I.	Internal Assessment	-	**40** Marks
II.	Theory Component	-	**60** Marks
	Total	-	**100** Marks

I. Internal Assessment in Each paper shall have the following sub components.

A) Internal Test	-	**10**Marks
B) Assignment/Book Review	-	**10**Marks
C) Seminar with Group Discussion	-	**10** Marks
D) Viva Voice-		**10** Marks
Total	**-**	**40 Marks**

NOTE:

Question papers shall have one Extra-long Answer Question Carrying 10 marks exclusively for the **Visually impaired candidates**, provided such candidates are enrolled in the course. In that case the extra Question should be printed at the end of the question paper super scribed with "Note".

The theory question paper shall have THREE parts and the maximum duration of the theory part shall be $2\frac{1}{2}$Hours and it shall be as follows:

PATTERN OF QUESTION PAPER
HISTORY - DSC

Marks: 60 **Time: $2\frac{1}{2}$ Hours**

Instructions: All PARTS are Mandatory. (ಎಲ್ಲಾ ಭಾಗಗಳು ಕಡ್ಡಾಯ)

PART – A / ಭಾಗ – ಎ

Answer ALL the following Questions in ONE Sentence each. **10x1=10**

ಕೆಳಕಂಡ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೂ ಒಂದು ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿ.

1. a.
   b.
   c.
   d
   e.
   f.
   g.
   h.
   i.
   j.

PART – B / ಭಾಗ – ಬಿ

Answer any FOUR of the following Questions **4x5=20**

ಕೆಳಕಂಡ ಯಾವುದಾದರೂ ನಾಲ್ಕು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

2
3
4
5
6
7

PART – C / ಭಾಗ – ಸಿ

Answer any THREE of the following Questions **3x10=30**

ಕೆಳಕಂಡ ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

8
9
10
11
12

NOTE: Attending MAP Question is Mandatory.(ಭೂಪಟದ ಪ್ರಶ್ನೆಯು ಕಡ್ಡಾಯವಾಗಿರುತ್ತದೆ.)

Questions must be prepared such that all units are covered.

PATTERN OF QUESTION PAPER
HISTORY - OPEN ELECTIVE

Marks: 60 **Time: $2\frac{1}{2}$ Hours**

Instructions: All PARTS are Mandatory.

PART – A / ಭಾಗ – ಎ

Answer ALL the following Questions in ONE Sentence each. **10x1=10**

ಕೆಳಕಂಡ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೂ ಒಂದು ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿ.

1. a.
   b.
   c.
   d
   e.
   f.
   g.
   h.
   i.
   j.

PART – B / ಭಾಗ – ಬಿ

Answer any FOUR of the following Questions **4x5=20**

ಕೆಳಕಂಡ ಯಾವುದಾದರೂ ನಾಲ್ಕು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

2
3
4
5
6
7

PART – C / ಭಾಗ – ಸಿ

Answer any THREE of the following Questions **3x10=30**

ಕೆಳಕಂಡ ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

8
9
10
11
12

NOTE: Attending MAP Question is Mandatory.(ಭೂಪಟದ ಪ್ರಶ್ನೆಯು ಕಡ್ಡಾಯವಾಗಿರುತ್ತದೆ.)

Questions must be prepared such that all units are covered.

Education Society (R)
Education to Excel

SBRR Mahajana First Grade College

(Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF History

UG ☑

PG ☐

NEP Syllabi for III and IV Semester BA- History

2022-23

DEPARTMENT OF History

Motto

History for future

Vision

Orienting the students to imbibe
Indian Culture and values through History

Mission

- To organize field visits to Historical places, Historical monuments, Excavation Sites, History museums, Conservation laboratory etc, which provides experiential learning.

- To take up special projects like conservation of monuments, heritage buildings etc.

- To organize exhibitions related to numismatics and philately

- To organize special lectures remembering National leaders, Martyrs and renowned personalities.

Name of the Degree program: BA **Discipline Course: History**

POs	Programme Outcomes (POs)
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Department of History

List of Board of Studies Members

Sl.No.	Name	Designation
1	**Mr. Dr. Sreedhara H** HoD & Assistant Professor SBRR Mahajana First Grade College (Autonomous), Jayalakshmipuram, Mysuru Email: sreedharah79@gmail.com **Cell: +91 9901041470**	**Chairperson**
2	**Dr. Nandeesha A R.** Assistant Professor SBRR Mahajana First Grade College (Autonomous), Jayalakshmipuram, Mysuru nandishar7@gmail.com **Cell: +91 9113060911**	**Member**
3	**Dr. K. Sadashiva** Prof & Chairman DOS History,Manasagangothri, Mysore sadashivak@gmail.com **Mobile : +91 9886153778**	**VC Nominee**
4	**Dr. Raghava B** Associate Professor, Field Marshal K M Cariappa College Mangalore University Madikeri, Kodagu-571201 desire.crb @gmail.com **Mobile : +91 9448721205**	**Expert from other University**
5	**Dr. Shambhulingamurthy H M** Associate Professor, Sahyadri Arts College Kuvempu University, Shivamogga-577203. shambhulingamurthyhm@gmail.com **Mobile : +91 8494999300**	**Expert from other University**
6	**Manjunatha H L** Senior Asst. Director Karnataka State Divisional Archives Office, Mysuru-560008 rajmanjuhlm@gmail.com **Mobile : +91 9483017571**	**Expert from Industry/Corporate Sector**

Course Structure & Pattern of Exam BA-History Discipline

(NEP Syllabus III & IV Semester)

Semester	Course Type	Course Code	Course Title	Credits	L	T	P
III	DSC-5	221329	Rise of Modern West (1600 – 1871)	3	3	0	0
	DSC-6	221330	History of Modern India (1757 to 1947)	3	3	0	0
	OE-3	22OEHIS301	Freedom Struggle in India (1857-1947)	3	3	0	0
		22OEHIS302	Introduction to Epigraphy	3	3	0	0

Semester	Course Type	Course Code	Course Title	Credits	L	T	P
IV	DSC-7	221429	History of Karnataka (From Earliest Times to 10th Century CE)	3	3	0	0
	DSC-8	221430	History of Modern Europe (1871-1945)	3	3	0	0
	OE-4	22OEHIS401	Freedom Movements in Karnataka (1800 to 1947)	3	3	0	0
		22OEHIS402	Principles and Practice of Museology	3	3	0	0

Pattern of Examination

Semester	Course Type	Course Title	Total Marks	IA Test/ Viva C1	IA Assignment/ Semina C2	Exam C3
III	**DSC-5**	Rise of Modern West(1600 – 1871)	100	20	20	60
	DSC-6	History of Modern India (1757to 1947)	100	20	20	60
	OE-3	Freedom Struggle in India(1857-1947)	100	20	20	60
		Introduction to Epigraphy	100	20	20	60
IV	**DSC-7**	History of Karnataka (From Earliest Times to 10th Century CE)	100	20	20	60
	DSC-8	History of Modern Europe (1871-1945)	100	20	20	60
	OE-4	Freedom Movements in Karnataka (1800 to 1947)	100	20	20	60
		Principles and Practice of Museology	100	20	20	60

II BA – III Semester

DSC-5 Rise of Modern West (1600-1871) Course Code: 221329

Course Title: Rise of Modern West (1600-1871)	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (Cos):

CO1. Comprehend how the geographical discoveries impact on the economy, polity and society of Western Countries. Students will develop an understanding of the significant transformation in European polity and society between sixteenth to nineteenth centuries.

CO2. Acquire the knowledge of various themes like capitalism, mercantilism, Renaissance and Reformation. Understand how scientific view helps western countries to achieve scientific revolution and industrial revolution.

CO3. Recognize how the liberal and democratic ideas helped to achieve all round developments in western world.

II BA – III Semester

DSC-5

Title of the Course: Rise of Modern West (1600-1871) Course Code: 221329

Course-1		**Course-2**	
Number of Theory Credits	**Number of lecture hours/ semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	39 or 42	3	39 or 42

Content of Course-1	**39/42Hrs**
Unit-1	**13/14**
Chapter-1 : Europe Expands and Divides The Overseas Discoveries and Conquests of Portugal and Spain	04
Chapter-2 : Transition from feudalism to Capitalism Capitalism – Mercantilism and the Commercial Revolution	04
Chapter-3 : Early Colonial Expansion and Overseas Trade Motives Beginning of the Era of Colonization –Mining and Plantation –African Slaves	04

Unit – II	13/14
Chapter-4 : Renaissance and Reformation Meaning of Renaissance – Spread of Renaissance – Renaissance of Art, Architecture – Music – Literature –Science – Reformations and Counter Reformation	05
Chapter-5 : The New Absolute Monarchies Emergence of Nation States – Theories of Government – Divine Right of Kings – Absolutism in Various States – Spain – Portugal – England – France – Austria – Russia	04
Chapter-6 : Scientific Revolution and the Age of Enlightenment Emergence of Scientific View of the World – Promotion of Science – The work of Early Scientists – Growth of Chemistry, Geology and Biology. The Age of Enlightenment – Major Events of Enlightenment – Classism and Romanticism – Humanitarianism – Nationalism – Enlightened Despotism	05
UNIT-III	**13/14**
Chapter-7 : The Growth of Liberalism and Democracy Basic Feature of Liberalism – Growth of Liberalism The Rise of Democracy – Democratic struggle in various countries public opinion and Polity	05
Chapter-8 : Industrial Revolution Scientific and Technological background to Industrialised Revolution – the Factory System – Stages and Effects of Industrial Revolution – Socialist Movement – Labour Movements	04
Chapter-9 : Consolidation of Large Nation States Unification of Italy – The Founding of the German Empire	04

- **No Historical Maps**

Suggested Readings:

1. Wells H.G. : An Outline History of the World
2. Wells H.G. : A Short History of the World
3. Hayes et.al : World History
4. Savelle Max (Ed.) : A History of World Civilisation (2 Vols)
5. Davies : World History
6. Ketelby C.D.M. : A History of Modern Time
7. Palmer R.R. and J.Colton : A History of Modern World
8. Grant and Temperley : Europe in the Nineteenth and Twentieth Century
9. Fisher HAL : A History of Europe
10. Thomson David : Europe since Napoleon
11. Hoskins H.L. : European Imperialism in Africa
12. Edword MacNall Burns : World Civilization (3 Vols.)

Course Articulation Matrix - 221329

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	1	2	3	1	3	3	1	1	3
CO2	3	1	2	-	2	3	1	3	3	1	1	2
CO3	3	1	2	1	2	3	1	3	3	1	1	2
Weighted Average	**3**	**1**	**2**	**1**	**2**	**3**	**1**	**3**	**3**	**1**	**1**	**2.33**

II BA – III Semester

DSC-6 History of Modern India 1757-1947 Course Code: 221330

Course Title: History of Modern India 1757-1947	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (Cos):

CO1. The students will be able to trace the British colonial expansion in the political contacts of 18th century India. They will learn about the changes in society, politics, religion and economy during the period. They will also acquire knowledge about the freedom struggle.

CO2. The contents of the syllabus are designed to cover core issues pertaining to vast canvass of nationalist history so that the student at the under graduate level is equipped to focus upon the core ideas of national movement in its conceptuality. India's national movement has vast and divergent ideological base with inner contradictions.

CO3. Understand how the colonial rule was overthrown by the Indian nationalists. Identify the various phases of National Movement. Appreciate the ideals and values of Gandhi that resulted in freedom.

II BA – III Semester

DSC-6

Title of the Course: History of Modern India 1757-1947 Subject Code: 221330

Course-1		**Course-2**	
Number of Theory Credits	**Number of lecture hours/ semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	39 or 42	3	39 or 42

Content of Course-1	39/42 Hrs
Unit-1	**13/14**
Chapter-1 : The Arrival of Europeans in India and Rise of British Supremacy The Portuguese – The Dutch – The English – The French – Pattern of European Trade- English East India Company: From Trading Company to Political Power – Anglo – French Struggle for Supremacy: The Carnatic Wars – British Conquest of Bengal – Plassey to Buxar (1757-1765)	03
Chapter-2 : British Expansion in South and North India – Beyond Indian Frontiers Conquest of Mysore and the Marathas, 1767-1818- Anglo – Mysore Wars (during 1767-1799) - Anglo – Maratha Wars (1775-1818) – British Expansion in North India – Conquest of Sindh, Punjab and Awadh, 1843-57.	04
Chapter-3 : British and their Impact on Indian Economy, Polity, Administration and Society Economy: Economic Model of British East India Company – Changes in Indian Agrarian Structure and Impact on Economy – New Land Revenue Setlements and their Impact – Permanent Settlement – Ryotwari System – Mahalwari System – Economic Impact of British Rule in India. Polity : Constitutional Development – Regulating Act 1773, Pitt's India Act 1784 and Government of India Act 1858. Administration: Indian Administration under the British – Evolution of Government – The Financial and Revenue Administration - The Civil Services, the Army. The Police and Judicial System – Social and Cultural Policy – Spread of Modern Education.	06
Unit – II	**13/14**
Chapter-4 : Resistance to the British Rule: Early Uprisings and the Revolts of 1857 Revolts in Bengal and Eastern India - Munda Rising –Santhal Rebellion – Revolts in Western India – Bhil Uprsing – Waghera Rising –Revolts in Southern India – The Revolt of the Raja of Vizianagaram –Revolts in Northern India –Revolt of 1857 – Nature, Events and Failures – Causes of Failure – Significance – Impact of the Revolt.	05

Chapter-5 : Socio Religious Reform Movements The Brahmo Samaj –Arya Samaj - Prarthana Samaj –Ramakrishna Mission and Swami Vivekananda, Satyashodak Samaj –Aligarh Movement – Shri Narayana Guru and SNDP Yogam	03
Chapter-6 : Administrative Changes After 1858 Administration – Changes in the Army – Public Services – Relation with the Princely States – Administrative Policies of Lord Lytton and Lord Ripon – Rise of Middle Class.	04
Unit-III	**13/14**
Chapter-7 : The Nationalist Movement, 1885-1919 Factors for the Rise and Growth of National Consciousness –The Foundation of the Indian National Congress – Moderate Phase (1885-1905) – The Rise of Neo-Nationalism or the Extremism (1905-19) – Lord Curzon and Partition of Bengal – Boycott and the Swadeshi Movement— Surath Split. - The Muslim League – The Hindu Mahasabha – Lucknow Pact (1916) Home Rule Movement	05
Chapter-8 : Struggle for Swaraj Phase – I (1919-1927) Beginning of the Gandhian Era – The Rowlatt Bills and Jallianwalla Bagh Incident – Khilafat and Non-Co-operation Movement – The Swarajist Party.	03
Chapter-9 : Struggle for Swaraj Phase –II (1927-1947) Simon Commission and Indians Agitation – Bardoli Sathygragha - The Nehru Report and Jinnah's Fourteen Points – Lahore Session and resolution on Poorna Swaraj – Civil Disobedience Movement –Revolutionary Movement- Chandrashekar Azad- Bhagath Singh- Round Table Conferences - Ambedkar and Poona Pact –The Government of India Act 1935 –National Movement during the Second World War – The Cripps Mission – Quit India Movement – Subhash Chandra Bose and INA – Wavell Plan – Simla Conference – Cabinet Mission Plan – Attlee's Declaration - Mountbatten Plan – The Indian Independence Act, of 1947.	06
Historical Places 1. Calcutta, 2.Calicut 3.Pondichery 4. Bassein 5. Lahore 6. Plassey 7.Thiruchanapally 8.Hoogly 9.Surat 10. Dacca 11. Nagpur 12. Madras 13.Delhi 14.Bombay 15. Poona 16.Lucknow 17. Kanpur 18.Banaras 19.Wandiwash 20.Srirangapattna 21.Machalipattanam 22.Gwalior	02

Historical Maps:

1) Presidency States of British Empire.
2) Sikh Empire under Ranjith Singh
3) Partition of Bengal -1905.
4) Partition of India-1947

Suggested Readings:

1. Bipin Chandra	:	Indian Struggle for Independence
	:	Freedom Struggle
2. Majumdar R.C.	:	Struggle for Fredom
		British Paramountacy and Indian Renaissance (Part-I)
3. Bipin Chandra	:	Rise Growth of Nationalism
4. Sekhar Bandopadya	:	Nationalist Movement in India
5. B.L.Grover	:	A New Look at Modern Indian History
6. Sailendra Nath Sen	:	An Advanced History of Modern India
7. A.R.Desai	:	Social Background of Indian Nationalism
8. Sumit Sarkar	:	Modern India 1885-1947
9. M.N.gupta	:	History of the Revolutionary Movement in India
10. Tarachand	:	History of freedom movement in India Vol.03
11. S.R.Mahrotra	:	The Emergence of Indian National Congress
12. Stein Burton	:	The making of Agrarian Policy in British India 1770-1900
13. Thompson & garret	:	Rise and Fulfillment of British Rule in India
14. A.C.Banerjee	:	The new History of Modern India (1707-1900)
15. C.A. Bayle	:	An illustrated History of Modern India 1600-1947
16. Dr. Sreedhara H		History of Modern India & Indian National Movement.
17. ಡಾ.ಕೆ.ಸದಾಶಿವ	:	ಆಧುನಿಕ ಭಾರತದ ಇತಿಹಾಸ
		ಭಾರತದ ಸ್ವಾತಂತ್ರ್ಯ ಹೋರಾಟ
18. ಎಂ.ಅಬ್ದುಲ್ ರೆಹಮಾನ್ ಪಾಷಾ	:	ರಾಷ್ಟ್ರೀಯ ಆಂದೋಲನ
19. ಸಿ.ಆರ್.ಕೃಷ್ಣರಾವ್	:	ಸ್ವತಂತ್ರ್ಯಾನಂತರದ ಭಾರತ
20. ಆರ್.ಪೂರ್ಣಿಮಾ	:	ಕ್ರಾಂತಿಕಾರಿ ಘಟನೆಗಳು
21. ಎನ್.ಪಿ.ಶಂಕರನಾರಾಯಣರಾವ್	:	ಸ್ವಾತಂತ್ರ್ಯ ಗಂಗೆಯ ಸಾವಿರ ತೊರೆಗಳು
22. ಕೆ.ಎಸ್.ಪಾರ್ಥಸಾರಥಿ	:	ಭಾರತದ ಪ್ರಥಮ ಸ್ವಾತಂತ್ರ್ಯ ಸಂಗ್ರಾಮ
23. ಬಿಪಿನ್ ಚಂದ್ರ (ಕನ್ನಡಕ್ಕೆ ಅನುವಾದ)	:	ಎಚ್.ಎಸ್.ಗೋಪಾಲ್ : ಆಧುನಿಕ ಭಾರತ ಇತಿಹಾಸ

24. ಕೆ.ಎಸ್.ಪಾರ್ಥಸಾರಥಿ : ಭಾರತದ ರಾಷ್ಟ್ರೀಯತೆಯ ಪರಿಕಲ್ಪನೆ
25. ಸಿ.ಬಿ.ಕಮತಿ : ಸ್ವಾತಂತ್ರ್ಯೋತ್ತರ ಭಾರತ
26. ಸೂರ್ಯನಾಥ ಯು. ಕಾಮತ್ : ಸ್ವಾತಂತ್ರ್ಯ ಹೋರಾಟದ ಸ್ಮೃತಿಗಳು
27. ಬಿ.ಪರಮೇಶ್ವರ : ಭಾರತ ಸ್ವಾತಂತ್ರ್ಯ ಚಳುವಳಿ
28. https://dceclirsp.weebly.com
29. https://ndl.iitkgp.ac.in
30. https://www.doabooks.org
31 https://dceclirsp.weebly.com
32 https://ndl.iitkgp.ac.in
33 https://www.doabooks.org

Course Articulation Matrix - 221330

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	2	3	1	3	3	1	1	2
CO2	3	1	1	-	2	3	1	3	3	1	1	2
CO3	3	1	2	1	2	2	1	3	3	1	1	2
Weighted Average	**3**	**1**	**1.33**	**1**	**2**	**2.66**	**1**	**3**	**3**	**1**	**1**	**2**

II BA – III Semester

OE.-3 Freedom Struggle in India (1857-1947)

Course Code: 22OEHIS301

Course Title: Freedom Struggle in India (1857-1947)	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (Cos):

CO1. Identify the causes that led to the rise of nationalism in India. Understand the various stages of the National Movement in India.

CO2. Trace the emergence of Indian National Congress.

CO3. Realize the harmful effects of division and disintegration. Develop a sense of patriotism, cooperation and belongingness

II BA – III Semester

OE-3

Title of the Course: Freedom Struggle in India (1857-1947)

Course-1		**Course-2**	
Number of Theory Credits	**Number of lecture hours/ semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	39 or 42	3	39 or 42

Content of Course-1	**39/42 Hrs**
Unit-1	**13/14**
Chapter-1 : The Rise and Growth of National Consciousness Factors Responsible for the Rise and Growth of Indian Nationalism	04
Chapter-2 : Emergence of Organized Nationalism Political Associations before Indian National Congress – Background to the birth of Indian National Congress – Formation of the Indian National Congress – Safety Valve Theory.	04

Chapter-3 : The Moderate Phase (1885-1905) The Programme and Policies of the Moderates – Dadabai Navaroji – Economic Critique of Imperialism – and Drain Theory.	03
Unit – II	**13/14**
Chapter-4 : Growth of Extremist Nationalism (1905-1919) The Surat Split- Causes for the Rise of the Extremists – Lal Bal Pal – The Partition of the Bengal – The Swadeshi and the Boycott –Home Rule Movement.	03
Chapter-5 : Emergence of Mahatma Gandhi in Indian Politics and his ideology Gandhi's Political Career in South Africa (1893-1914) – Gandhi's Entry into Indian Politics: Champaran, Ahmedabad and Kheda (1917-18)	04
Chapter-6 : Struggle for Swaraj Phase – I (1919-1927) The Montegue – Chelmsford Reforms – The Rowlatt Act – Jallianwala Bagh Massacre – The Khilafat and Non-Cooperation Movement (1919-1922) – The Swarajists – Swarajist Party.	06
Unit-III	**13/14**
Chapter-7 : Rise and Growth of Communalism and Socialism in India Factors Responsible for the Rsie and Growth of Communalism and Socialism in India and Muslim League - Formation of the Hindu Mahasabha- Lucknow Pact (1916) –Growth of Socialist and Labour Ideals in the Indian National Movement.	05
Chapter-8 : Struggle of Swaraj Phase – II (1927-1947) Simon Commission – Nehru Report – The Lahore Session of the Congress – Declaration of Poorna Swaraj - Civil Disobedience Movement 1930-34 – Dandi March – Gandhi Irwin Pact – Round Table Conferences – Poona Pact and Ambedkar – The Individual Satyagrah, 1940-41- The Cripps Mission and Proposal Quit India Movement – Subash Chandra Bose and INA – Wavell Plan – Simla Conference- Cabinet Mission plan –Attlee's Declaration –Mountbatten Plan- The Indian Independence Act, of 1947.	05
Chapter-9 : Other Important Freedom Fighters Surendranatha Banerji –V.D. Savarkar, Ambedkar, Vallabha Bhai Patel- Sarojini Naidu – Chandrashekhar Azad – Bhagat Singh– Madam Bhikaji Cama –Babu Jagajivanram– Udam Singh- Jawaharalal Nehru – Vallaba Bhai Patel – Kasturi Bai.	04
Historical Places 1) Bombay 2) Madras 3) Kolkata 4) Dandi 5) Dhaka 6) Lahore 7) Poona 8) Delhi 9) Amritsar 10) Lucknow 11) Bardoli 12) Karachi 13) Kanpura 14) Gwalior 15) Surat 16) Belgaum 17) Noukhali 18) Cuttack 19) Allahabad 20) Karawara.	02

❖ Historical Maps

1. Partition of Bengal -1905.
2. Important Sathyagraha Places of Gandhiji-(1917-1948)
3. Important Places of Quit India Movement of 1942.
4. Partition of India-1947.

Suggested Readings:

1. Bipin Chandra : Indian Struggle for Independence
2. Majumdar R.C. : Struggle for Freedom
3. Sekh Bandopadhyaya : Nationalist Movement in India
4. B.L.Grover : A New look at Modern Indian History
5. Sailendranath sen : An advanced History of Modern India
6. A.R.Desai : Social background of Indian Nationalism
7. ಡಾ.ಕೆ.ಸದಾಶಿವ : ಆಧುನಿಕ ಭಾರತದ ಇತಿಹಾಸ
   ಭಾರತದ ಸ್ವಾತಂತ್ರ್ಯ ಹೋರಾಟ
8. ಎಂ.ಅಬ್ದುಲ್ ರೆಹಮಾನ್ ಪಾಷಾ : ರಾಷ್ಟ್ರೀಯ ಆಂದೋಲನ
9. ಆರ್.ಪೂರ್ಣಿಮಾ : ಕ್ರಾಂತಿಕಾರಿ ಘಟನೆಗಳು
10. ಎನ್.ಪಿ.ಶಂಕರನಾರಾಯಣರಾವ್ : ಸ್ವಾತಂತ್ರ್ಯ ಗಂಗೆಯ ಸಾವಿರ ತೊರೆಗಳು
11. ಕೆ.ಎಸ್.ಪಾರ್ಥಸಾರಥಿ : ಭಾರತದ ಪ್ರಥಮ ಸ್ವಾತಂತ್ರ್ಯ ಸಂಗ್ರಾಮ
12. ಪರಮೇಶ್ವರ ಬಿ. : ಭಾರತದ ಸ್ವಾತಂತ್ರ್ಯ ಹೋರಾಟ
13. *https://dceclirsp.weebly.com*
14. *https://ndl.iitkgp.ac.in*
15. *https://www.doabooks.org*
16. *https://dceclirsp.weebly.com*
17. *https://ndl.iitkgp.ac.in*
18. *https://www.doabook s.org*

Course Articulation Matrix - 22OEHIS301

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	1	1	2	1	3	2	1	1	2
CO2	2	1	-	1	1	1	1	2	2	1	-	2
CO3	3	1	1	-	1	1	-	2	2	1	1	2
Weighted Average	**3**	**1**	**1.5**	**1**	**1**	**1.33**	**1**	**2.33**	**2**	**1**	**1**	**2**

II BA – III Semester

OE-3 Introduction to Epigraphy **Course Code:** 22OEHIS302

Course Title: Introduction to Epigraphy	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (Cos):

CO1. To understand the definition an importance of Palaeography, Brahmi, Kharosti scripts, dating and Eras and identify the writing materials – Engraving – forged records – Seals.

CO2. To understand the Evolution and Development of one of the scripts mentioned above with reference to estampages and understanding the differences and similarities of inscriptions of North and South India.

CO3. To learn about Practical Training in taking estampages of stone and copper plate inscriptions.

II BA – III Semester

OE-3

Title of the Course: Introduction to Epigraphy

Course-1		**Course-2**	
Number of Theory Credits	**Number of lecture hours/ semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	39 or 42	3	39 or 42

Content of Course-1	**39/42 Hrs**
Unit-1	**13/14**
Chapter-1 : Introduction Definition and importance of Palaeography – origin and antiquity of writing in India.	04
Chapter-2 : Evolution and development of Scripts – Indus Valley Script – Kharosthi Script – Brahmi Script	04
Chapter-3 : Writing materials – Engraving – forged records – Seals	04
Unit – II	**13/14**

Chapter-4 : Introduction Nature – Scope – Importance of Epigraphy	05
Chapter-5 : Types of Inscriptions - the languages of Inscriptions – writing Materials – Stone, Copper, Palm Leaves, Terracotta	04
Chapter-6 : Study of Important North Indian Inscriptions 1) Ashoka's Rock Edict No.13 2) Hatigumpha Inscription of Kharavela 3) Nasik Cave Inscription of Nahapana 4) Mehrauli Pillar Inscription of Chandraguptha – II 5) Samudraguptha's Allahabad Pillar Inscription	05
Unit-III	**13/14**
Chapter-7 : Study of Important South Indian Inscriptions 1) Brahmagiri and Maski edicts of Ashoka 2) Halmidi Inscription 3) Aihole Inscription of Pulakeshi-II 4) Uttaramerur Inscription of Parantaka Cholal-I 5) Shravanabelagola Inscription of Bukka-I	05
Chapter-8 : Contribution of Important Epigraphists – B.L.Rice – J.F.Fleet-D.L.Narasimhachar – M.H.Krishna	04
Chapter-9 : Visit to Local Inscription Sites Practical training in taking Estampages of stone or copper plate inscriptions – preparation of Field Study Report for assignment is mandatory.	04
Map for Study – Locate the Important Inscriptions and Its Importance 1.Besnagar 2.Hathigumpa 3.Junagada 4.Mathura 5.Banavasi 6.Badami 7.Arjunawada 8.Beluru 9.Kudiyanamalai 10.Nasik 11.Allahabad 12.Brahmagiri 13.Talagunda 14.Saranath 15.Maski 16.Sannathi 17.Gujarra 18.Nagarjunakonda 19.Halmidi 20.Shabazgarhi	02

Suggested Readings:

1. D.C.Sircar : Indian Epigraphy
2. R.B.Pandey : Indian Palaeography
3. Gai G.S. : Introduction to Indian Epigraphy
4. ನರಸಿಂಹಮೂರ್ತಿ ಎ.ವಿ. : ಕನ್ನಡ ಲಿಪಿಯ ಉಗಮ ಮತ್ತು ವಿಕಾಸ
5. ಅಣ್ಣಿಗೇರಿ ಎಂ.ಎಂ. : ಶಾಸನಗಳ ಸಂಗ್ರಹ
6. ಡಾ.ಚಿದಾನಂದಮೂರ್ತಿ : ಕನ್ನಡ ಶಾಸನಗಳ ಸಾಂಸ್ಕೃತಿಕ ಅಧ್ಯಯನ
7. ಸುಂದರ ಅ. : ಇತಿಹಾಸ ಮತ್ತು ಪುರಾತತ್ವ
8. ಹಿರೇಮಠ ಎಂ.ಎಸ್. : ಶಾಸನಾಧ್ಯಯನ
9. ಕೃಷ್ಣಮೂರ್ತಿ ಸಿ.ಪಿ. : ಶಾಸನಶಾಸ್ತ್ರ ಪ್ರವೇಶ

10. ರಮೇಶ ಕೆ.ವಿ. : ಕರ್ನಾಟಕ ಶಾಸನ ಸಮೀಕ್ಷೆ, ಬೆಂಗಳೂರು

11. ಶ್ರೀನಿವಾಸ ವಿ. ಪಾಡಿಗಾರ್ : ಭಾರತೀಯ ಶಾಸನ ಆಕರಗಳು

Course Articulation Matrix - Course Code: 22OEHIS302

COs/ POS	**PO1**	**PO2**	**PO3**	PO4	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	1	2	1	1	3	3	2	1	2
CO2	3	2	2	1	2	1	1	3	2	2	-	2
CO3	2	2	1	1	2	1	1	2	2	1	1	2
Weighted Average	**2.66**	**2**	**1.66**	**1**	**2**	**1**	**1**	**2.66**	**2.33**	**1.66**	**1**	**2**

II BA – IV Semester

Course Code: 221429

DSC-7 History of Karnataka (From Earliest times to 10th Century CE)

Course Title: History of Karnataka (From Earliest times to 10th Century CE)	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (Cos):

CO1. Develop a bird view on the historical development of Polity, economy and culture of Karnataka. Cultural transitions of Karnataka from earliest times to 10th century CE.

CO2. To understand how the different ruling powers develop a harmony in society through their religious policies.

CO3. Develop a strong cultural understanding of Karnataka's language, literature and different cultural aspects. To identify the makers of Karnataka and how they helped to preserve the continuity of long cultural heritage.

II BA – IV Semester

DSC-7 **Subject Code: 221429**

Content of Course-1	**39/42 Hrs**
Unit-1	**13/14**
Chapter-1 : Survey of Sources – Pre Historic Culture – Stages –Important Sites – Brahmagiri, Sanganakallu – T.Narasipura – Proto Historic Culture – Sannati – Rajaghatta.	05
Chapter-2 : The Maurya's in Karnataka – Ashoka – Mauryan influences on Polity of Karnataka – Inscriptions – Royal Edicts.	04
Chapter-3 : The Satavahanas – Gautamiputra Satakarni – Polity and Administration	04

Unit – II : The Rise of Karnataka	13/14
Chapter-4 : The Kadambas of Banavasi Mayuravarma and Kakusthavarma – Polity – Administration –Land Grant Policy	04
Chapter-5 : The Gangas of Talakadu Konganivarma – Durvineeta – Sri Purusha – Chavundaraya –Polity – Administration – Land Grant Policy	05
Chapter-6 : The Chalukyas of Badami Pulakeshi-II, Vikramaditya-II, Polity – Administration – Land Grant Policy	05
Unit-III : The Ages of Empires	**13/14**
Chapter-7 : The Rastrakutas Krishna-I, Govinda-III, Amoghavarsha Nrupatunga – Expansion Policy – Polity and Administration	05
Chapter-8 : The Chalukyas of Kalyana Tailapa –II, Vikramaditya-VI, Someshwara-III, Polity – Administration	04
Chapter-9 : Minor Dynasties of Anglent Karnataka The Punnatas –The Nolambas – The Banas	04
Map for Study Kadamba State during Kakustavarma Ganga State during Durvineeta Badami Chalukyan Empire during Pulikeshi II Rastrakuta Empire under Amoghavarsha Nrupathunga	02
Important Historical Places: 1. Talakadu 2.T.Narasipura 3.Sanganakallu 4.Chandravalli 5.Siddapura 6.Jatingarameshwara 7.Manyakheta 8.Badami 9.Pattadakallu 10.Aihole 11.Banavaasi 12.Kalyana 13.Maski 14.Sannati 15.Shravanabelagola.	

Suggested Readings:

1. B.Sheik Ali : The Western Gangas
2. G.R.Rangaswamaiah : Dakshina Baratada Itihasa
3. A.Sundara (Ed.) : Kannada Vishaya Vishwakosha – Ithihasa mattu Puratatva
4. K.R.Basavaraju : History and Culture of Karnataka
5. P.B.Desai : A History of Karnataka

6. A. Sundara (Ed.) : Karnataka Charitre – Vol.I
7. B.Surendra Rao (E.d) : Karnataka Charitre Vol.II
8. K.A.Nilakanta Sastri : A History of South India
9. R.S.Mugali : The Heritage of Karnataka
10. Suryanath U. Kamath : Karnataka Sankshipta Ithihasa

(1) https://www.k11news.com
(2) https://kn.m.wikipedia.org
(3) https://www.loc.gov
(4) https://m.youtube.com

Course Articulation Matrix - 221429

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	3	1	2	2	2	1	2
CO2	3	1	-	-	-	2	1	1	2	1	-	2
CO3	3	-	1	1	-	2	1	2	2	1	1	2
Weighted Average	**3**	**1**	**1**	**1**	**1**	**2.33**	**1**	**1.66**	**2**	**1.33**	**1**	**2**

II BA – IV Semester

DSC-8 History of Modern Europe (1871-1945) Course Code: 221430

Course Title: History of Modern Europe (1871-1945)	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (Cos):

CO1. It provides a critical overview of the Europe from 1871 to 1945. It shall also trace the patterns and outcomes of social upheaval throughout Europe in the first half of 19th century. To understand the debates on the development and impact of industrial capitalism. The birth of new social movements, political ideas and structures shall be contextualized within developing capitalism of the nineteenth century. And investigates the political, social and economic developments that shaped and continue to shape the modern age.

CO2. Students would be expected to develop on her/his understanding of the social and economic dimensions of the Industrial revolution in eighteenth century Britain to compare and understand the specific case studies of France. Germany and Russia in the nineteenth century.

CO3. Examined changes since the 18th century in European social economic and political structure. Locating Europe's place in World history its development.

II BA – IV Semester

DSC-8

Title of the Course: History of Modern Europe (1871-1945) Course Code: 221430

Course-1		**Course-2**	
Number of Theory Credits	**Number of lecture hours/ semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	39 or 42	3	39 or 42

Content of Course-1	39/42 Hrs
Unit-1 : Introduction	**13/14**
Chapter-1 : The German Empire from 1871-1914 German Constitution – Domestic and Foreign Policies of Bismark and William Kaiser II	04
Chapter-2 : III Republic of France **Domestic and Foreign Policies of France** **Colonialism and Imperialism in Asia and Africa in the 19th and 20th Century**	04
Chapter-3 : Eastern Question : Interests of Various Powers in Bolkan States **Stages:** 1. Serbian Independence to Treaty of Paris 2. Paris Treaty to Treaty of Berlin 3. Berlin Treaty of Bucharest 4. Congress of Berlin 5. Balkan Crisis and Wars – Causes – Failures- Consequences – Results	06
Unit – II	**13/14**
Chapter-4 : International Diplomacy Before the First World War Power Block and Alliances : Expansion of European Empires from 1870-1914 - Three Emperors League– Relations between England and France – Anglo- Russian Alliance of 1907.	04
Chapter-5 : First World War Causes – Course – Results – The Paris Peace Conference and the Treaty of Paris – Treaty of Versailles – Fourteen Points of Woodrow Wilson.	04
Chapter-6 : League of Nations The assembly – The Council – Organisations – Achievements and Failures	03
Unit-III	**13/14**
Chapter-7 : Rise of Totalitarianism in Europe Russian Revolution, 1917 – Causes and Its results Rise of Totalitarianism in Russia under Leninand and Stalin.	04
Chapter-8 : Failure of Welmar Republic and Rise of Nazism in Germany Adolf Hitler – Home and Foreign Policies – Formation of the Greater Germany –	05

Fascism in Italy – Benito Mussoloni – Home and Foreign Policies	
Chapter-9 : Quest for Security and Read to Second World War International Issues leading to Second World War – Causes – Course – Results and Treaties Formation of UNO – its Organisation – Achievements ans Failures.	05
❖ **No Historical Maps**	

Suggested Readings:

1. C.D.Hazen : Modern Europe Since 1789
2. E.H.Carr : International Relations between to World Wars (1919-1939)
3. R.D.Cornwall : World History in 20th Century
4. A.J.P. Taylor : Struggle for Mastery of Europe 1848-1918
5. A.J.Grant & Templeton : Europe in 19th and 20th Century
6. C.D.M.Ketelby : A History of Modern Times from 1789
7. C.J.H. Hayes : Cultural and Political History of Europe Vol.1 (1500-1830)
8. George Lichtheim : A Short History of Socialism
9. Peter Mathias : First Industrial Revolution
10. Alec Nove : An Economic History of the USSR
11. Andrew Porter : European Imperialism 1870-1914 (1994)
12. Clyde and Beer : History of the far East
13. Hayes (ed.) : World History
14. Durant, Will : Lesson of History
15. Palmer, R.R. and J.Cotton : A History of the modern world
16. Fisher HAL : A History of Europe
17. Hays C.J.H : Contemporary Europe since 1870
18. Grosvenor, Edwin : Contemporary History of the world.

Course Articulation Matrix - 221430

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	1	2	2	1	-	2
CO2	2	1	-	-	-	1	1	2	2	1	1	2
CO3	2	1	1	1	-	1	1	2	2	1	1	2
Weighted Average	**2.33**	**1**	**1**	**1**	**1**	**1.33**	**1**	**2**	**2**	**1**	**1**	**2**

II BA – IV Semester

Course Code: 22OEHIS401

OE-4 Freedom Movements in Karnataka (1800-1947)

Course Title: Freedom Movements in Karnataka (1800-1947)	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (Cos):

CO1. Understand nature of freedom struggle in Karnataka and analyses the different stages of freedom struggle in Karnataka

CO2. To know the Swadeshi and Non-Cooperation Movement in Karnataka

CO3. To know the influence of Gandhi on freedom struggle and understand the prominent freedom fighters of Karnataka

II BA – IV Semester

OE-4

Title of the Course: Freedom Movements in Karnataka (1800-1947)

Course-1		**Course-2**	
Number of Theory Credits	**Number of lecture hours/ semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	39 or 42	3	39 or 42

Content of Course-1	**39/42 Hrs**
Unit-1	**13/14**
Introduction : Introduction to Historical Background	**02**
Chapter-1 : The disintegration of Karnataka and absorption of Karnataka areas into Madras, Bombay Provinces and Hyderabad State – Economic Background to Karnataka National Movement.	04
Chapter-2 : Armed Resistances against the British Rule in Karnataka Rani of Kittur (1824) – Sangolli Rayann (1829-30) – Nagar Revolt (1830-31)	04

Resistance in Kodagu.	
Chapter-3 : The Impact of the Rebellion of 1857 on Karnataka Against anti – Arms Act – Bedas of Halagali – 1857 – Venkatappa Nayaka of Surapura – Baba Saheb of Naragunda – Bhimarao of Mundaragi –Effects of the Struggle.	04
Unit – II	**13/14**
Chapter-4 : The National Movement in Bombay Karnataka Rise of Nationalism in Karnataka – Early activities – Influence of Balagangadhar Tilak – The response to Swadeshi Movement – Home Rule Movement – Influence of Mahatma Gandhi- Non Cooperation Movement – Belgaum Congress Session of 1924 – Civil Disobedience Movement.	05
Chapter-5 : The National Movement in Hyderabad Karnataka Early activities – The response to Swadeshi and Non-Cooperation Movement- Influence of Mahatma Gandhi and Swamy Ramananda Theertha – Razakar Movement	04
Chapter-6 : National Movement in Princely Mysore Early activities – Influence of Tilak and the Response to Swadeshi Movement – Establishment of Indian National Congress in Mysore – Civil Disobedience Movement – Forest Satyagraha and No Tax campaign	05
Unit-III	**13/14**
Chapter-7 : Foundation of Mysore Congress Shivapura Congress Session – Vidhurashwatha Tragedy –Quit India Movement – Esuru Tragedy – Mysore Chalo Movement	05
Chapter-8 : Congress Constructive Programmers in Karnataka Propogation of Khadi – Rejuvenation of Village Industries –Removal of Untouchability – Prohibition of Liquor.	04
Chapter-9 : Prominent Freedom Fighters of Karnataka Hardikar Manjappa – Ganghadhara Rao Deshpande – Kamala Devi Chattopadhyaya – Tagaduru Ramachandra Rao – Nijalingappa S. – T.Siddalingaiah – K.C.Reddy – Yashodhara Dasappa – Aluru Venkataraya.	04
❖ **No Historical Maps.**	

Suggested Readings:

1. S.Chandrashekhar : ದಕ್ಷಿಣ ಭಾರತ: ವಸಾಹತುಶಾಹಿ ಮತ್ತು ಸಂಘರ್ಷ
   ಆಧುನಿಕ ಕರ್ನಾಟಕದ ಆಂದೋಲನಗಳು
2. R.R.Diwakar : Karnataka through the ages
3. P.B.Desai : History of Karnataka
4. K.Veerathappa : Studies in Karnataka History and Culture
5. James Manor : Political changes in an Indian State Mysore 1917-1955
6. M.Shamarao : Modern Mysore (2 Vols.)
7. Sunanath U. Kamath : A Concise History of Karnataka
   ಕರ್ನಾಟಕದ ಸಂಕ್ಷಿಪ್ತ ಇತಿಹಾಸ
8. ಷೇಕ್ ಅಲಿ ಬಿ. (ಪ್ರ.ಸಂ.) : ಕರ್ನಾಟಕ ಚರಿತ್ರೆ ಸಂಪುಟ–6 ಮತ್ತು 7
9. ಎಚ್.ಎಸ್.ಗೋಪಾಲರಾವ್ : ಕರ್ನಾಟಕ ಏಕೀಕರಣದ ಇತಿಹಾಸ
10. ದೊರೆಸ್ವಾಮಿ ಎಚ್.ಎಸ್. : ಸ್ವಾತಂತ್ರ್ಯ ಚಳವಳಿ: ಕರ್ನಾಟಕ
11. ದಿವಾಕರ್ ಆರ್.ಆರ್. : ಕರ್ನಾಟಕದ ಪರಂಪರೆ, ಸಂಪುಟ–2

Course Articulation Matrix - Course Code: 22OEHIS401

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	-	-	1	-	2	2	2	2	1	1	2
CO2	2	-	-	-	-	2	2	2	2	1	-	2
CO3	3	1	1	1	-	2	1	2	2	1	1	2
Weighted Average	**2.66**	**1**	**1**	**1**	**-**	**2**	**1.66**	**2**	**2**	**1**	**1**	**2**

II BA – IV Semester

OE.-4 Principles and Practice of Museology

Course Code: 22OEHIS402

Course Title: Principles and Practice of Museology	
Total Contact Hours: 39 to 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (Cos):

CO1. Understand the concepts of Museum, Museology, Museographer. Learn how to make museum and cultural center as a destination of cultural tourism

CO2. To identify properly both Cultural and Natural Heritage objects and other cultural organizations as resource center for local communities. To know the acquisition methods, proper collection of objects for cultural centers

CO3. Documentation of Tangible, Intangible and Natural Heritage objects

II BA – IV Semester

OE-4

Title of the Course: Principles and Practice of Museology

Course-1		**Course-2**	
Number of Theory Credits	**Number of lecture hours/ semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	39 or 42	3	39 or 42

Content of Course-1	**39/42 Hrs**
Unit-1	**13/14**
Introduction	
Chapter-1 : Definition and concepts of Museology and Museum	04
Chapter-2 : Origin and development of Museology and Museography	04
Chapter-3 : Functions of Museum Collection, Documentation – Index and Catalogue – Numbering the objects	04

Unit – II	13/14
Chapter-4 : A brief History of Museum Movement in India and Abroad	05
Chapter-5 : Types of Museums – Archaeology Museums – Art Museums – History Museums – Maritime Museums – Military and war Museums – Open air Museum – Industrial Museums, Science Museums.	04
Chapter-6 : Indian Legislative Measures Relating to Museums – Treasure Trove Act, Antiquity Registration Act. **Role of Professional Organizations** – Museums Association of India UNESCO – ICOM – ICOMOS	05
Unit-III	**13/14**
Chapter-7 : Important National Museums of India National Museum, New Delhi- Salarjung Museum Hyderabad – Calcutta Museum – Mathura Museum – Government Museum Chennai	05
Chapter-8 : Regional Museums – Natural History Museum – Mysore Government Museum, Hassan Government Museum Bangalore – Manjusha Museum, Dharmasthala – Suttur Museum	04
Chapter-9 : Exhibition Equipment's in Museum Showcase – Pedestals – Audio Visual Equipment – Labeling. Visit to nearest Museums or Preparation project report on Museums for assignment is mandatory	04
Historical Places : 1.New Delhi 2.Calcutta 3.Hyderabad 4.Mumbai 5.Chennai 6.Bengaluru 7.Bhuvaneshwar 8.Patna 9.Kochi 10.Ahmadabad 11.Poona 12.Mysuru 13.Dharmasthala 14.Hassan 15.Amritsar 16.Jaipur 17.Madras 18.Dakshina Chitra (Muttukad) 19.Indore 20.Goa	

Suggested Readings:

1. Grace Morley : Museums To-day, Department of Museology, M.S.University of Baroda, 1968
2. Diwadi V.P. (Ed.) : Museums and Museology : New Horizons
3. Vasant Hari Bedkar : New Museology for India, National Museum Institute of History of Art, Conservation and Museology, 1985
4. Shivaram Murti C. : Directory of Museums, Museology and New Museology, New Delhi, 1985
5. Nigam M.L. : Fundamentals of Museology, Navhind

Prakashan, 1966.
6. Agrawal Usha — Museum in India – a brief directory
7. Seth, Manvi — Communication and Education in Indian Museums
8. Roy. Shilpi — Museum documentation : A Potent tool for collection Management
9. Smith Bautista, Susana — Museums in the Digital Age: Changing Meaning of Places, Community and Culture.
10. Nigam M.L. — Museums in India
11. Nigam M.L. — Fundamentals of Museology
12. Ghosh D.P. — A Studies in Museology
13. ಸಣ್ಣಯ್ಯ ಬಿ.ಎಸ್. (ಅನುವಾದ) : ವಸ್ತುಸಂಗ್ರಹಾಲಯ ಮೂಲತತ್ವ

Course Articulation Matrix - Course Code: 22OEHIS402

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	1	2	1	2	3	1	1	2
CO2	2	2	2	1	1	2	1	2	3	1	1	2
CO3	2	-	1	-	-	1	-	1	2	1	-	2
Weighted Average	**2**	**2**	**1.66**	**1**	**1**	**1.66**	**1**	**1.66**	**2.66**	**1**	**1**	**2**

Pedagogy

- Lecture Method – Class Room Teaching,
- Learning Through Project work
- Collaborative learning strategies
- Use of Resources like Audio- Visual aids, Films, Documentaries
- Visit to Historical Sites, Museums etc.
- ICT Supplemented Teaching
- Seminars/ Guest/ Special Lectures
- Group Discussions

Modes of Assignment

- Individual Assignments
- Project work
- Written Test
- Documentaries

Assessment:

Weightage for assessments (in percentage)

<table>
<tr><th colspan="3">Formative Assessment</th></tr>
<tr><th colspan="2">Internal Assessment</th><th>Theory Part Semester End Examination</th></tr>
<tr><td>Internal Test</td><td>10</td><td rowspan="6">60</td></tr>
<tr><td>Assignment / Book Review</td><td>10</td></tr>
<tr><td>Seminar with Group Discussion</td><td>10</td></tr>
<tr><td>Viva Voice</td><td>10</td></tr>
<tr><td>Total</td><td>40</td></tr>
<tr><td colspan="2">Grand Total</td><td>100</td></tr>
</table>

PATTERN OF QUESTION PAPER FOR III AND IV SEMESTER EXAMINATION

SCHEME OF EXAMINATION
B.A- History (NEP)
(DSCC With 3 Credits- (No. of Papers- 2)
III and IV Semester of B.A., (C1-20, C2-20, C3-60 Total=100 Marks)

SCHEME OF EXAMINATION for 100 Marks

(Each paper shall have two components)

I.	Internal Assessment	-	**40** Marks
II.	Theory Component	-	**60** Marks
	Total	-	**100** Marks

I. Internal Assessment in Each paper shall have the following sub components.

A)	Internal Test	-	**10** Marks
B)	Assignment/Book Review	-	**10** Marks
C)	Seminar with Group Discussion	-	**10** Marks
D)	Viva Voice	-	**10** Marks
	Total	**-**	**40 Marks**

II. Theory Component

The theory question paper shall have **Three** parts and the maximum duration of the theory part shall be $\mathbf{2\frac{1}{2}}$ **Hours**

NOTE:

Question papers shall have one Extra long Answer Question Carrying 10 marks exclusively for the **Visually impaired candidates**, provided such candidates are enrolled in the course. In that case the extra Question should be printed at the end of the question paper super scribed with "Note".

The theory question paper shall have THREE parts and the maximum duration of the theory part shall be $\mathbf{2\frac{1}{2}}$ Hours and it shall be as follows:

PATTERN OF QUESTION PAPER FOR 3rd & 4th SEMESTERS
HISTORY – DSC

Max Marks: 60

Time: $2\frac{1}{2}$Hours

Instructions: All PARTS are Mandatory. (ಎಲ್ಲಾ ಭಾಗಗಳು ಕಡ್ಡಾಯ)

PART – A / ಭಾಗ – ಎ

Answer ALL the following Questions in ONE Sentence each. **10x1=10**

ಕೆಳಕಂಡ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೂ ಒಂದು ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿ.

1. a.
   b.
   c.
   d
   e.
   f.
   g.
   h.
   i.
   j.

PART – B / ಭಾಗ – ಬಿ

Answer any FOUR of the following Questions **4x5=20**

ಕೆಳಕಂಡ ಯಾವುದಾದರೂ ನಾಲ್ಕು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

2
3
4
5
6
7

PART – C / ಭಾಗ – ಸಿ

Answer any THREE of the following Questions **3x10=30**

ಕೆಳಕಂಡ ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

8
9
10
11
12

NOTE: Attending MAP Question is Mandatory.(ಭೂಪಟದ ಪ್ರಶ್ನೆಯು ಕಡ್ಡಾಯವಾಗಿರುತ್ತದೆ.)

Questions must be prepared such that all units are covered.

PATTERN OF QUESTION PAPER 3rd & 4th SEMESTER
HISTORY - OPEN ELECTIVE

Max Marks: 60

Time $2\frac{1}{2}$ Hours

Instructions: All PARTS are Mandatory.

Instructions: All PARTS are Mandatory. (ಎಲ್ಲಾ ಭಾಗಗಳು ಕಡ್ಡಾಯ)

PART – A / ಭಾಗ – ಎ

Answer ALL the following Questions in ONE Sentence each. **10x1=10**

ಕೆಳಕಂಡ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೂ ಒಂದು ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿ.

1. a.
   b.
   c.
   d
   e.
   f.
   g.
   h.
   i.
   j.

PART – B / ಭಾಗ – ಬಿ

Answer any FOUR of the following Questions **4x5=20**

ಕೆಳಕಂಡ ಯಾವುದಾದರೂ ನಾಲ್ಕು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

2
3
4
5
6
7

PART – C / ಭಾಗ – ಸಿ

Answer any THREE of the following Questions **3x10=30**

ಕೆಳಕಂಡ ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

8
9
10
11
12

NOTE: Attending MAP Question is Mandatory. (ಭೂಪಟದ ಪ್ರಶ್ನೆಯು ಕಡ್ಡಾಯವಾಗಿರುತ್ತದೆ.)

Questions must be prepared such that all units are covered.

Education Society (R)
Education to Excel

SBRR Mahajana First Grade College

(Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF History

UG ☑

PG ☐

NEP Syllabi for

V & VI Semester BA- History

2023-24

DEPARTMENT OF History

Motto

History for future

Vision

Orienting the students to imbibe
Indian Culture and values through History

Mission

- To organize field visits to Historical places, Historical monuments, Excavation Sites, History museums, Conservation laboratory etc, which provides experiential learning.

- To take up special projects like conservation of monuments, heritage buildings etc.

- To organize exhibitions related to numismatics and philately

- To organize special lectures remembering National leaders, Martyrs and renowned personalities.

Name of the Degree program: B.A. **Discipline Course: History**

POs	Programme Outcomes (POs)
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Department of History

List of Board of Studies Members

Sl.No.	Name	Designation
1	**Mr. Dr. Sreedhara H** HoD & Assistant Professor SBRR Mahajana First Grade College (Autonomous), Jayalakshmipuram, Mysuru Email: sreedharah79@gmail.com **Cell: +91 9901041470**	**Chairperson**
2	**Dr. Nandeesha A.R.** Assistant Professor SBRR Mahajana First Grade College (Autonomous), Jayalakshmipuram, Mysuru nandishar7@gmail.com **Cell: +91 9113060911**	**Member**
3	**Dr. K. Sadashiva** Prof & Chairman DOS History, Manasagangothri, Mysore sadashivak@gmail.com **Mobile : +91 9886153778**	**VC Nominee**
4	**Dr. Raghava B** Associate Professor Field Marshal K M Cariappa College Mangalore University Madikeri, Kodagu-571201 desire.crb@gmail.com **Mobile : +91 9448721205**	**Expert from other University**
5	**Dr. Shambhulingamurthy H M** Associate Professor, Sahyadri Arts College Kuvempu University, Shivamogga-577203. shambhulingamurthyhm@gmail.com **Mobile : +91 8494999300**	**Expert from other University**
6	**Manjunatha H L** Senior Asst. Director Karnataka State Divisional Archives Office, Mysuru-560008 rajmanjuhlm@gmail.com **Mobile : +91 9483017571**	**Expert from Regional Archive, Mysuru**

Course Structure & Pattern of Exam BA-History Discipline
(NEP Syllabus V &VI Semester)

Sem	Course Type	Course Code	Course Title	Credits	L	T	P
V	DSC-9	231529	History of Karnataka (From 11thCenture to 1761 CE)	4	4	0	0
	DSC-10	231530	India and Its Neighbors (1947-2020)	4	4	0	0
	DSC-11	231531	Colonialism and Nationalism in Asia	4	4	0	0

Sem	Course Type	Course Code	Course Title	Credits	L	T	P
VI	DSC-12	231629	History of Karnataka (From 1761-1956)	4	4	0	0
	DSC-13	231630	Regional History-Modern Mysore (1881-1947)	4	4	0	0
	DSC-14	231631	History of China and Japan	4	4	0	0
	INT	**23INTHIS01**	**Internship**	**2**	**2**	**0**	**0**

Pattern of Examination

Semester	Course Type	Course Title	Total Marks	IA Test/ Viva C1	IA Assignment/ Semina C2	Exam C3
V	**DSC-9**	History of Karnataka (From 11th Centure to 1761 CE)	100	20	20	60
	DSC-10	India and Its Neighbors (1947-2020)	100	20	20	60
	DSC-11	Colonialism and Nationalism in Asia	100	20	20	60
VI	**DSC-12**	History of Karnataka (From 1761-1956)	100	20	20	60
	DSC-13	Regional History-Modern Mysore (1881-1947)	100	20	20	60
	DSC-14	History of China and Japan	100	20	20	60
	23INTHIS01	**Internship**	**100**	**50**	**50**	**-**

III BA – V Semester

Course Code: 231529

DSC-9 History of Karnataka (From 11th Century to 1761 CE)

Course Title: **History of Karnataka (From11thCentury to 1761 CE)**	
Total Contact Hours: 60	Course Credits: 4
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

CO 1 : To understand how Chaluckyas of Kalyana came to power, significant progress in polity, cultural both in the Art &Architecture during the rule of Kalachuris and Hoysalas.

CO 2 : To know the establishment of Vijayanagara Empire and Bahammani kingdom and they played a great role in the history of Karnataka

CO 3 : To learn about the strong Muslim shahi states, Wadeyar Dynasty founded as a feudatory principality & it's turning point in the history of Karnataka

III BA–V Semester

Course Code: 231529

DSC-9 Title of the Course: History of Karnataka (From 11th Century to 1761 CE)

Course1		Course 2	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
4	**60**	**4**	**60**

Contentof Course-1	**60 Hrs**
Unit–I Kalachuries, Seunas and Basaveshwara	**19**
Chapter 1: Introduction-Survey of the sources - Karnataka at the beginning of the 11th century and socio-political conditions.	**08**
Chapter 2: Disintegration of Kalyani Chalukyas and the rise of Kalachuries and Seunas.	**06**
Chapter 3: Basaveshwara and Veershaiva Movement - His Socio-Political Ideas and Social reforms.	**05**
Unit-II Hoysalas, Vijayanagara Empire and Post-Vijayanagara	**26**
Chapter 4: Foundation of the Hoysala dynasty – Early Hoysalas – Vishnuvardhana-Ballala II-Ballala III- Downfall of the Hoysalas - Hoysala state and society – cultural contributions.	**08**
Chapter 5: Establishment of Vijayanagara Empire – Sources-origin – Sangamas - Harihara & Bukkaraya - Devaraya II & his achievements – Tuluvas - Krishnadevaraya and his achievements – Achyutharaya – Aliya Ramaraya – Disintegration of Vijayanagara Empire - Administration, society, economy and cultural contributions of Vijayanagara Empire.	**10**

Chapter 6: Talikote and after – causes for the battle of Talikote – Aravidu dynasty – Nayaks of Keladi –Shivappanayaka-Palegars of Chitradurga – Madakarinayaka V-Yelahanka Nadu Prabhus– Kempegowda II-HariDasa Movement - Kanakadasa and Purandaradasa.	**08**
Unit-III Bahmanis, Shahis and Early Wodeyars	**15**
Chapter 7: Foundation of the Bahmani state – Sources – origin – early rulers – Ala-ud-din – Muhammad Shan I – Mahamud Gawan – Downfall of Bahamnis - Administration - social life – economy - art and architecture – Sufi Movement – Syed Mohammad and Khwaja Bhande Nawaz	**05**
Chapter 8: AdilShahis of Bijapur and BaridShais of Bidar – Yusuf Adilshahi and Qasim Barid Shahi – Contributions of Adil and Barid Shahis – downfall of Adilshahis and BaridShahis	**06**
Chapter 9: Early Wodiyars – ChikkadevarajaWodiyar – Consolidation of his kingdom – Relations with Mughals and Marathas – Administration and Literary Contributions.	**04**

Historical Maps:

1) Hoysala Empire under Vishnuvardhana
2) Vijayanagara Empire under Krishnadevaraya
3) Bahamani Kingdom under Mohammed Gawan
4) Princely Mysore under ChikkadevarajaWodeyar

- **Historical Places**:

1.Beluru 2.Halebidu 3.Somanathapura 4.Kudalasangama
5. Karawar 6.Udupi 7.Mysuru 8. Srirangapatna 9. Hampi
10. Raichur 11. Mangaluru 12. Bidar 13. Gulbarga 14. Bijapur
15. Talikote 16. Ahmmednagar 17. Talakadu 18. Bengaluru
19. Yalanduru 20. Tumkur.

- **Books for Study and Reference:**

1) Burton Stein, Vijayanagara, Cambridge University Press, 1990.
2) K.N. Chithis, Keladi Polity, Dharwad, 1977.
3) H.K. Sherwani, History of Deccan, Rept., Delhi, 1980.
4) R.Champakalaxami, Kesavan Veluthat and T.R. Venugopalan, ed., State and Society in pre-Modern South India, Thristur, 2003.
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6) HayavadanaRao, C (ed.,) Mysore Gazetteer, (5vols), !950.
7) Joyser, G.R. History of Mysore and the Yadava Dynasty, 1950.
8) Krishna Rao, P., Brief History of Mysore, 1868.
9) Krishna Rao, Madras District Gazetter, Bellary District. 1904.
10) Dr. Suryanath U. Kamath – A Concise History of Karnataka
11) Dr. Suryanath U. Kamath – KarnatakadaSankshiptaIthihasa
12) Prof. B. Parameshwara – Karnataka ItihasaParichaya
13) Prof. Lokappa Gowda – Adhunika Karnataka Itihasa
14) KNA – Karnataka Itihaasa
15) Prof. Chandrashekarappa - Karnataka Itihaasa

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Course Articulation Matrix - Course Code: 231529

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	2	1	1	3	3	2	1	2
CO2	3	2	2	1	2	1	1	3	2	2	-	2
CO3	2	2	1	1	2	1	1	2	2	1	1	2
Wtd. Avg.	**2.66**	**2**	**1.66**	**1**	**2**	**1**	**1**	**2.66**	**2.33**	**1.66**	**1**	**2**

III BA – V Semester

Course Code: 231530

DSC-10 India and its Neighbors (1947 to 2020)

Course Title: **India and its Neighbors (1947 to 2020)**	
Total Contact Hours:60	Course Credits: 4
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

CO 1: To Acquire knowledge of India & its Neighbors, foreign policy, the highs and lows of India's foreign relations.

CO 2: To comprehend the role of Indian Ocean, SAARC, SAPTA and National development.

CO 3: To recognize India's trends in relations and challenges, opportunities & future prospects.

III BA–V Semester

Course Code: 231530

DSC-10 : Title of the Course: India and its Neighbors (1947 to 2020)

Course Title: **India and its Neighbors (1947 to 2020)**	
Total Contact Hours: 60	Course Credits: 4
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS (UG)	Summative Assessment Marks:100

Content of Course 2	60 Hrs
Unit–I Afghanistan, Pakistan and Bangladesh	**22**
Chapter No : 1 India and Afghanistan History of Indo-Afghan Relations- Its geo-strategic importance - Developmental partnership - Instability in Afghanistan – Taliban and Terrorism - Role of India's bilateral relation.	**06**
Chapter 2: India and Pakistan Colonial Legacies - Two nation theory - India Pakistan Wars - Areas of conflict - Kashmir and Border issues - Nuclear Policy of India and Pakistan - Cross Border terrorism - water dispute - Bus diplomacy.	**10**
Chapter 3: India and Bangladesh Colonial Legacies - The role of India in Bangla Liberation War -Areas of Cooperation and Crisis- Border Issues - Water disputes: Teesta water issue and Ganga river.	**06**
Unit–II Myanmar, Bhutan and Nepal	**22**
Chapter 4: India and Myanmar India - Mynmar Relationship - Scope forcooperation between North East India & Myanmar - Rohingya issue - Insurgency in the North EasternStates.	**07**
Chapter 5: India and Bhutan Bhutan's Geographical Significance- Political Significance - India-Bhutan Friendship Treaty - Objection of Bhutan to India's Motor Vehicle	**09**

Agreement: Areas of Cooperation- Trade, Economic Assistance: Water Resources, Border Management: Educational and Cultural Cooperation.	
Chapter 6: India and Nepal Historic India Nepal relations - Post Independence India and Nepal: Economic Cooperation - The Issue of Water and Hydropower Cooperation.	**06**
Unit-III Srilanka, Maldieves and Mauritius	**16**
Chapter 7: Historical Background of Indo -Sri Lanka Relations: Cultural Relations- Geographical and Strategic Importance -Issues – The Fishermen Issue- Ethnic problem in Sri Lanka – Tamil Eelam Movement - LTTE - Peace Process – IPKF.	**06**
Chapter 8: India and Maldieves Background of India-Maldives Relations - Political and Cultural ties - Political relations -Bilateral Assistance- Tsunami Related Assistance- India Maldives Relations: Challenges.	**06**
Chapter 9: India and Mauritius India – Mauritius Bilateral Relations – Historical - Cultural – Trade – Foreign Direct Investment– Military Cooperation – Operation Lal Dora.	**04**

***No Historical Maps**

***Books for Study and Reference:**

1) Bhandhari, C.P. Foreign Policy of India. New Delhi: Sterling publishers, 1977.
2) Bipan Chandra et. Al. India after Independence. 1947-2000. New Delhi: PenguinBooks, 2000
3) Chatterjee.ANeighbours, Major Powers and Indian Foreign Policy. New Delhi. TheOrient Blackswan, 2017.
4) Dixit, J.N, Indian Foreign Policy and its Neighbours. New Delhi: Gyan PublishingHouse, 2001
5) Dutt, V.P, India's Foreign Policy in Changing World. New Delhi: Vikas PublishingHouse, 2003
6) JayapalanN, India and her neighbours. New Delhi: Atlantic Publishers, 2000

7) Robin Blackburn (ed.), Explosion in Subcontinent India, Pakistan, Bangladesh AndCeylon, Harmountsworth: Penguin, 1975.
8) Avatar Singh Bhasin, India in Sri Lanka between Lion and Tiger, New Delhi,Manas Publication, 2004.
9) UrmilaPhadnis, Ethnicity and Nation Building in South Asia, New Delhi: Sage publications, 1989.

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4) Studyiq.com/articles/neighboringcountries
5) Textbook.com/ias-preparation/relation

Course Articulation Matrix – 231530

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	1	2	2	1	-	2
CO2	2	1	-	-	-	1	1	2	2	1	1	2
CO3	2	1	1	1	-	1	1	2	2	1	1	2
Wtd. Avg.	**2.33**	**1**	**1**	**1**	**1**	**1.33**	**1**	**2**	**2**	**1**	**1**	**2**

III BA – V Semester

Course Code: 231531

DSC-11 Colonialism and Nationalism in Asia

Course Title: Colonialism and Nationalism in Asia	
Total Contact Hours: 60	Course Credits: 4
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Syllabus Authors: BOS(UG)	Summative Assessment Marks: 100

Course Outcomes (COs):

CO 1: To understand about the familiarities with history of modern Asia.

CO 2: To get an acquainted with Colonialism & Nationalism & its effects in Asia.

CO 3: To acquire knowledge of Global Crisis and historical movements.

III BA – V Semester

Course Code: 231531

Paper No.5.3 DSC-11 Colonialism and Nationalism in Asia

Content of Course - 3	60 Hrs
Unit-I Indo-China and Indonesia	**22**
Chapter 1: Historical Background – French Colonisation in Indo-China – Growth of Nationalism – The Communist Movement – Role of Ho Chih Minh in Vietnamese Struggle for independence .	**8**
Chapter 2: Geneva Conference – Vietnam after 1954 – 1976.	**4**
Chapter 3: Indonesia – Historical Background – Coming of Europeans - Dutch Colonisation – Growth of Nationalism in Indonesia – Early struggles against Dutch domination – Role of Dr. Sukarno – Japanese aggression of Indonesia (1942-45) – Final phase of freedom struggle – 1945-49 – Indonesia since 1949 – Bandung Conference – 1955	**10**
Unit-II Turkey & Iran	**22**
Chapter 4: Turkey – Historical Background – European Colonial interests and wrecking of the Ottoman Empire – Crimean War – Treaty of Sanstefano – Berlin Congress – Autocratic Rule of Abdul Hamid II – Growth of Turkish Nationalism –Young Turk Movement.	**8**
Chapter 5: Turkey and Balkan Crisis – I World War – Treaty of Sevres and Laussane – Modernisation of Turkey – Musthafa Kemal Pasha – Kemalism – II World War.	**5**
Chapter 6: Iran – Coming of Europeans – Anglo Russian interests in Iran– The Tobacco Revolt of 1890-92 – Constitutional Revolution of 1906 – Shuster Incident – Iran and the first world war – the rise of modern State with Reza Shah Pehlavi (1925 – 1941) – Mohammad Shahapur Rezashah Pehlavi – Oil crisis – Fall of Dr. Mussadeq.	**9**
Unit III – Arabs and Israel	**16**
Chapter 7: European Colonial interests in Arabia – Growth of Arab Nationalism – Wahabi Movement – Pan Islamic Movement – Jamaluddin Afghani – Syrian Literary Renaissance – Young Arabs –	**5**

Arabs and First World War.	
Chapter 8: Israel – Historical Background – Zionist movement – Dr. Chaim Weizman – Balfour Declaration – (1917) Migration of Jews – White Paper – (1939) – United Nations Plan – Creation of Israel - Arab – Israel Conflict – Arab League – Palestine Liberation Organization.	**7**
Chapter 9: Important Historical Places: Jakarta – Bandung – Hanoi - Constantinople – Ankara – Tehran - Tel Aviv - Jerusalem – Damascus – Madina–Beirut –Bhagdad –Mecca – Cairo.	**4**

Books for Study and Reference:

1. M.E. Yapp, The Making of Modern Near East 1792-1923 – Longman – Harlow-1987
2. Janet Afary-The Iranian Constitutional Revolution – 1906-1911
3. Abrahmanian Ervand-Iran between Two Revolutions prince ton University Press – 1952
4. Cyrus Ghani -Iran and Rise of Reza Shah. From Qajar Collapse to Pahlavi Power – I.B.Tawis, London-1998.
5. Sardesai D.R.-South East Asia- Past and Present, New Delhi-Vikas-1981
6. Norman Stone - Turkey a short History
7. Panikar K M - Asia and western dominance
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9. Sardesai - South East Asia - Past and Present
10. Herald M Vinanke - The Short History of South East Asia
11. D T Joshi - The Outline of Asian History
12. Lokappa Gowda- Adhunika Asia
13. KNA – Adhunika Asia
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Course Articulation Matrix - 231531

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	1	2	2	1	-	2
CO2	2	1	-	-	-	1	1	2	2	1	1	2
CO3	2	1	1	1	-	1	1	2	2	1	1	2
Weighted Average	**2.33**	**1**	**1**	**1**	**1**	**1.33**	**1**	**2**	**2**	**1**	**1**	**2**

III BA–VI Semester

Course Code: 231629

DSC-12 History of Karnataka (From 1761-1956)

Course Title: **History of Karnataka (From 1761-1956)**	
TotalContact Hours: 60	CourseCredits: 4
Formative Assessment Marks:40	Duration of ESA/Exam:60
Syllabus Authors: BOS(UG)	Summative Assessment Marks:100

Course Outcomes (COs):

CO 1: To know about the history of modern Mysore, especially rule of Wodeyars and muslim dictators.

CO 2: To get acquainted with nature of colonial rule in Mysore &Coorg.

CO3: To comprehend how the Kannadigas played a role in the Karnataka freedom movement.

III BA–VI Semester

Course Code: 231629

DSC-12 Title of the Course: History of Karnataka (From 1761-1956)

Course - 1		Course– 2	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
4	**60**	**4**	**60**

Content of Course - 1	60 Hrs
Unit–I Introduction	**23**
Chapter 1 :Introduction – Survey of the sources – Rise and fall of Haider Ali and Tipu Sultan – Early life of Haider Ali and Tipu Sultan – Anglo-Mysore wars and their effects – Fall of Tipu Sultan – Modernization of administration and economy – Cultural contribution of Haidar Ali and Tipu Sultan.	**10**
Chapter 2: Treaty of 1799 and Role of Rani Lakshmamanni – Confronting Colonialism – Mysore under KrishnarajaWadiyar III.	**06**
Chapter 3: Commissioners' rule in Mysore – Mark Cubbon and Bowring in Mysore – Their reforms – Restoration in Mysore – Attempts towards modernization in Mysore.	**07**
Unit–II Colonialism in Karnataka	**18**
Chapter 4: Colonialism in Mysore – Indirect rule in Mysore and Coorg as protectorates.	**06**
Chapter 5: Colonialism in Hyderabad Karnataka - Territories under colonial rule -Hyderabad Karnataka under the Nizams – Mahaboob Ali Khan – His socio-political reforms.	**06**
Chapter 6: Territories under colonial rule – British Karnataka - Bombay Karnataka.	**06**
Unit-III Nationalism in Karnataka	**19**

Chapter 7: Impact of the rebellion of 1857 on Karnataka - Bedas of Halagali against anti-arms Act – Venkatappa Nayaka of Surapura – Babasahebof Naragunda – Bhimaraoof Mundaragi – effects of the struggle.	**05**
Chapter 8: Rise of nationalism and awakening in Mysore, Hyderabad Karnataka and Bombay Karnataka – Influence of Tilak and Gandhi – Response to swadeshi and non-cooperation movements in Karnataka – Belgaum congress session (1924) -Satygraha campaigns in Karnataka (1930-34) – Quit India movement in Karnataka. Accession of Karnataka territories into Indian Union – 1947-48.	**10**
Chapter 9: Unification movement in Karnataka – factors – views of different committees (Dhar, JVP, and SRC) - contributions of various Kannada organizations – Role of Kannada literature and journalism – Formation of Karnataka – 1956.	**04**

- **Historical Map & Places**

1) Bidar 2) Gulbarga 3) Bijapur 4) Belguam 5) Bagalkot
6) Dharwad 7) Hubli 8) Batkala 9) Udupi 10) Mangalore

11) Kopala 12) Raichur 13) Bellary 14) Mysuru 15) Srirangapatna

16) Bangalore17) Thirichinapali 18) Madras 19) Dindigal 20) Hyderabad

Books for Study and Reference :

1. K. Sherwani, History of Deccan, Rept., Delhi, 1980.
2. R. Campakalaxami, KesavanVeluthat and T.R. Venugopalan, ed., State and Society in pre-modern South India, Thrisur, 2003.
4. Bowring L.B., Haidar Ali &TippuSultanand the Struggle with Muslim Powers 1893.
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7. Campbel J.M.,(ed) Bijapur District Gazetteer. 1884.
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9. Dharwad District Gazzetter, 1884.
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12. HayavadanaRao. (ed.,) Mysore Gazetteer, (5vols), !950.
13. Joyser, G.R. History of Mysore and the Yadava Dynasty, 1950.
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19. I.M. Muthanna– History of Karnataka: History, Administration & Culture
20 . Dr. B.SheikAlI- Ground work of Karnataka History
21. Dr. Suryanath U. Kamath – A Concise History of Karnataka
22. Dr. Suryanath U. Kamath – KarnatakadaSankshiptaIthihasa
23. Prof. B. Parameshwara – Karnataka ItihasaParichaya
24. Prof. LokappaGowda – Adhunika Karnataka Itihasa
25. KNA – Karnataka Itihaasa
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Course Articulation Matrix - Course Code: 231629

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	2	1	1	3	3	2	1	2
CO2	3	2	2	1	2	1	1	3	2	2	-	2
CO3	2	2	1	1	2	1	1	2	2	1	1	2
Wtd. Avg.	**2.66**	**2**	**1.66**	**1**	**2**	**1**	**1**	**2.66**	**2.33**	**1.66**	**1**	**2**

III BA–VI Semester

Course Code: 231630

DSC-13 Regional History - Modern Mysore (1881-1947)

Course Title: Regional History-Modern Mysore (1881-1947)	
Total Contact Hours:60	Course Credits: 4
Formative Assessment Marks:40	Duration of ESA/Exam: 60
Syllabus Authors: BOS(UG)	Summative Assessment Marks: 100

Course Outcomes(COs):

CO 1 : To acquire knowledge about the history of modern Mysore.

CO 2 : To understand the role of British commissioners in princely state of Mysore.

CO3 : To learn the rise & Growth of Backward class & National movement in Mysore.

III BA–VI Semester

Course Code: 231630

DSC-13 Title of the Course: Regional History - Modern Mysore (1881-1947)

Course - 1		Cours– 2	
Number of Theory Credits	**Number of lecture hours / semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
4	**60**	**4**	**60**

Content of Course 2	**60 Hrs**
Unit–I Archaeological Sites	**21**
Chapter 1: Introduction to Modern Mysore – Survey of Literature – The Rendition Act of 1881 and its main provisions -A Progressive monarch : Chamaraja Wodeyar X (1881- 1894) –Dewan Rangacharlu – Administrative Reforms – Development of Education – Establishment of Representative Assembly– Railway – Famines and their impact	**10**
Chapter 2: Dewan SheshadriIyer —Development of Agriculture and Industries – Railway- Social Reforms – Infant Marriage Prevention Regulation – Development of Education – Introduction of Mysore Civil Service Exams	**07**
Chapter 3: Vanivilasa Sannidhana – Regency Rule (1894 -1902) – Shivanasamudra Hydro Electric Power Plant –VanivilasaSagara (Marikanive Project).	**04**
Unit-II	**21**
Chapter 4: Rajarshi Nalvadi Krishnaraja Wodeyar (1902 -40) – Nalvadi's vision of Modern Mysore – Development of Education – Establishment of University of Mysore -Nalvadi and Social Justice – Leslie Miller Committee – Introduction of Reservation for Non-Brahmins – Construction of KRS dam.	**08**
Chapter 5: Dewan Sir M Vishweshwaraiah (1912- 18) – Developmental Policies and Modernization Programmes – Industrialization - Progress in	**08**

Agriculture, Education, Railway, Health and Sanitation.	
Chapter 6: DewanMirza Ismail (1926 - 1941) – Developmental Policies – Administrative Reforms – Constitutional Reforms – Growth of Local Bodies – Progress in Agriculture, Industries, Electricity -Trade and Commerce – Education – Health and Sanitation – Brindavan Garden.	**05**
Unit-III	**18**
Chapter 7: Jayachamaraja Wodeyar (1940-47) –His Contribution to Literature and Music – Dewans N. Madhavarao (1940-46) and ArcotRamaswamyModaliyar (1946-49) – Indian National Movement and Indian Union.	**04**
Chapter 8: Regionalism, Casteism and Communalism in Modern Mysore – Mysore - Madrasi Brahmin Conflict – Caste Consciousness and Caste Associations - Non-Brahmin Movement – Depressed Classes Movement – Communal Disturbances and the role of Muslim League.	**06**
Chapter 9: Nationalism in Modern Mysore — Nationalism during Pre- Gandhian Era –Swadeshi Movement –Non Co-Operation Movement – Belgaum Congress – Civil Disobedience Movement – Forest Satyagrahas – Establishment Mysore Congress – Shivapura Congress Session – Vidhurashwatha Tragedy –Quit India Movement – The Esur Tragedy –Mysore Chalo Movement.	**08**

- **Historical Map & Places**

1) Ankola 2) Esuru 3) Harihara 4) Chitradurga 5) Shivamogga 6) Hassan 7) Bhadravati 8) Chamarajanagara 9) Yalanduru 10) Nanjanagudu

11) Mysuru 12) Belagola 13) Tumkur 14) Mandya 15) Shivapura 16) Bangalore 17) Kolara 18) Vidhurashwatta 19) Karwara 20) Channapattana

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1. Anitha. M.S, RajarshiNalvadiKrishnarajaWodeyar (Jeevana, SadhanemattuVyaktitva)
2. Bjorn Hettne, The Political Economy of Indirect Rule, Mysore 1881-1947
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14. Dr. Suryanath U. Kamath – KarnatakadaSankshiptaIthihasa
15. Prof. B. Parameshwara – Karnataka ItihasaParichaya
16. Prof. LokappaGowda – Adhunika Karnataka Itihasa
17. KNA – Karnataka Itihaasa
18. Prof. Chandrashekarappa - Karnataka Itihaasa

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2) En.academic.com
3) Vdoc.pub/documents
4) Pdfsearches.com/modern-history

Course Articulation Matrix - Course Code: 231630

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	2	1	1	3	3	2	1	2
CO2	3	2	2	1	2	1	1	3	2	2	-	2
CO3	2	2	1	1	2	1	1	2	2	1	1	2
Weighted Average	**2.66**	**2**	**1.66**	**1**	**2**	**1**	**1**	**2.66**	**2.33**	**1.66**	**1**	**2**

III BA – VI Semester

Course Code: 231631

DSC-14 History of China and Japan

Course Title: **History of China and Japan**	
Total Contact Hours:60	Course Credits: 4
Formative Assessment Marks:40	Duration of ESA/Exam:60
SyllabusAuthors:BOS(UG)	SummativeAssessmentMarks:100

Course Outcomes(COs):

CO 1 : To get acquainted how to transform the Chinese society from traditional to modern culture.

CO2 : To comprehend how the Chinese were united towards the foreign colonial powers& defeated them.

CO 3 : To get knowledge in critical thinking & identify historical themes in modern east Asia.

III BA –VI Semester

Course Code: 231631

DSC-14 Title: History of China and Japan

Course - 1		Course– 2	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
4	**60**	**4**	**60**

Content of Course - 3	60 Hrs
Unit–I Imperialism and china during the 19th century	**21**
Chapter 1:Chinese feudalism: Gentry, bureaucracy and peasantry, the Confucian value system: Sino centrism; the canton commercial system.	**06**
Chapter 2: The Transformation of China into an informal colony; the opium wars; the unequal treaties; the scramble for concessions; finance imperialism; The open door policy.	**07**
Chapter3:Agrarian and popular Movement: Taiping and yi Ho Tuan: Attempts at self-Strengthening (Tzu-Chiang): Reforms of 1860-95;1890 and Boxar Rebellion of 1900.	**08**
Unit-II The Emergence of Nationalism and Communism in China	**20**
Chapter 4:The Revolution of 1911: causes, nature and significance the local composition of the Revolution; Sun Yat-Sen and his contributions. The formation of the Republic; Yuan Shihkai; May Fourth Movement of 1919: nature and significance.	**10**
Chapter5: Formation of CCP; (China Communist Party) and the Kuomintang (Nationalist Party KMT); The First united Front.	**05**
Chapter6:The Communist movement in China: the Jiangxi period and the rise of Mao Tse Tung and communist China.	**05**
Unit– III Japan	**19**

Chapter 7: Japan in 19th Century - Transition from feudalism to capitalism; Western Contact - The Perry Mission; Meiji Restoration: its nature and significance; Political Reorganization; Military Reforms; Social, Cultural and educational & Economic reforms; Meiji Constitution.	**08**
Chapter 8 : Japanese Imperialism : (a) China (b) Manchuria (C) Korea.	**06**
Chapter9:Democracy and Militarism/Fascism: Popular / People's Rights Movement, Nature of Political Parties: Rise of Militarism - Nature and Significance, Second world war; American Occupation; Post-war changes in Japan.	**05**

Books for Study and Reference

1. Clyde and Beers: The Far East
2. H.M. Vinacke: A History of the far East in Modern Times.
3. K.S. Latoureete: A Short History of the Far East
4. B. Sheik Ali and B. Muddachari: A Short History of Modern Asia (1900-1960)
5. Y. Immanuel Hsu: The Rise of Modern China.
6. Nathaniel Prefer : the Far East: A Modern History
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8. George Allen: A Short Economic History of Jagan
9. Kenneth B. Pyle: the Making of Modern Japan
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14.Phalaksha – Adhunika Aisa
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- **Weblinks**

1) en.wikipedia.org/wiki/china-japan
2) en.wikipedia.org/wiki/history-of-EastAsia
3) en.wikipedia.org/wiki/china
4) en.wikipedia.org/wiki/first-sino-japan war
5) en.wikipedia.org/wiki/ categary-china

Course Articulation Matrix - 231631

COs/ POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	2	1	2	2	1	-	2
CO2	2	1	-	-	-	1	1	2	2	1	1	2
CO3	2	1	1	1	-	1	1	2	2	1	1	2
Weighted Average	**2.33**	**1**	**1**	**1**	**1**	**1.33**	**1**	**2**	**2**	**1**	**1**	**2**

Pedagogy

- Lecture Method – Class Room Teaching
- Learning Through Project work
- Collaborative learning strategies
- Use of Resources like Audio- Visual aids, Films, Documentaries
- Visit to Historical Sites, Museums etc.
- ICT Supplemented Teaching
- Seminars/ Guest/ Special Lectures
- Group Discussions

Modes of Assignment

- Individual Assignments
- Project work
- Written Test
- Documentaries

Assessment:

Weightage for assessments (in percentage)

Formative Assessment		
Internal Assessment		**Theory Part Semester End Examination**
Internal Test	10	60
Assignment / Book Review	10	
Seminar with Group Discussion	10	
Viva Voice	10	
Total	**40**	
Grand Total		**100**

PATTERN OF QUESTION PAPER FOR V &VI SEMESTER EXAMINATION

SCHEME OF EXAMINATION
B.A- History (NEP)
(DSC With 4 Credits- (No. of Papers- 3)
V and VI Semester of B.A., (C1-20, C2-20, C3-60 Total=100 Marks)

SCHEME OF EXAMINATION for 100 Marks
(Each paper shall have two components)

I.	Internal Assessment	-	**40** Marks
II.	Theory Component	-	**60** Marks
	Total	-	**100** Marks

I. Internal Assessment in Each paper shall have the following sub components.

A)	Internal Test	-	**10** Marks
B)	Assignment/Book Review	-	**10** Marks
C)	Seminar with Group Discussion	-	**10** Marks
D)	Viva Voice	-	**10** Marks
	Total **- 40 Marks**		

II. Theory Component

The theory question paper shall have **Four** parts and the maximum duration of the theory part shall be $\mathbf{2\frac{1}{2}}$ **Hours**

NOTE:

Question papers shall have one Extra-long Answer Question Carrying 10 marks exclusively for the **visually impaired candidates**, provided such candidates are enrolled in the course. In that case the extra Question should be printed at the end of the question paper super scribed with "Note".

The theory question paper shall havefour parts and the maximum duration of the theory part shall be $\mathbf{2\frac{1}{2}}$ Hours and it shall be as follows:

PATTERN OF QUESTION PAPER FOR V&VI SEMESTERS

HISTORY – DSC (NEP)

Max Marks: 60

Time: $2\frac{1}{2}$Hours

Instructions: All PARTS are Mandatory. (ಎಲ್ಲಾ ಭಾಗಗಳು ಕಡ್ಡಾಯ)

PART – A / ಭಾಗ – ಎ

Answer ALL the following Questions in ONE Sentence each. **10x1=10**

ಕೆಳಕಂಡ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೂ ಒಂದು ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿ.

1. a.
   b.
   c.
   d
   e.
   f.
   g.
   h.
   i.
   j.

PART – B / ಭಾಗ – ಬಿ

Answer any FOUR of the following Questions **4x5=20**

ಕೆಳಕಂಡ ಯಾವುದಾದರೂ ನಾಲ್ಕು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

2
3
4
5
6
7

PART – C / ಭಾಗ – ಸಿ

Answer anyThree of the following Questions **2x10=20**

ಕೆಳಕಂಡ ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

8
9
10
11.
12. Map Question.

NOTE: Attending MAP Question is Mandatory. **4+6=10**

Note: One Essay Question given for Blind Students instead of Map Question.

Internship

Semester: VI

Course Code: 23INTHIS01	**Course Title: SEC(2) - Internship**
Course Credits: 02	**Hours of Teaching/Week:**
Total Contact Hours: **90 Hours Internship**	**Formative Assessment Marks:** 100 Marks (C1=50+C2=50)

Note: This course will run as per the guidelines defined by the University of Mysore, Mysuru and the same is approved by BoS, Economics, SBRR Mahajana First Grade College, (A) Mysuru.

Course Outcomes (COs):

CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.

CO2: Sharpen the domain knowledge and provide core competency skills by developing Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

Course Articulation Matrix –23INTHIS**01**

CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO 1	3	3	3	3	3	3	2	2	3	3	3	2
CO 2	3	3	3	3	3	2	2	2	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2.5**	**2**	**2**	**3**	**3**	**3**	**2.5**

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively for the semester. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

The student is evaluated for 100 Marks in C1 and C2 as per the following scheme:

Project Progress Presentation (**C1**): 50 marks

Project Development and Report (**C2**): 50 marks

Assessment Criteria	Marks
Project Presentation Skills	50
Project Development Skills and Report	50
Total	**100**

==========

Education Society (R)
Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA

Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

Department of Journalism & Mass Communication

BA – I & II SEMESTER (NEP) SYLLABUS

CHOICE BASED CREDIT SYSTEM & NEP

BOARD of STUDIES

UG ☑

PG ☐

2021-22

Mahajana Education Society (R)
Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA

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Department of Journalism & Mass Communication

Motto:

'Feed the watchdog, build the safe society'
To groom the students as Media Professionals with knowledge and skills to excel

Vision:

To inspire successive generations of talented Individuals to become dedicated Journalists.

Mission:

Provides students with the intellectual, interpretive and Practical skills they need to function as professionals. With state-of-the-art technology. We have created an environment for hands-on teaching and learning. Internships are vital to the educational experience and students may choose from a wide range of opportunities in print, television, radio and Internet media from around the region.

Mission Statement:

The organization seeks to extend collectively on a national and even an international level the individual leadership its members practice on their campuses. This organization will work to ensure that its constituents innovate, manage and lead in a media marketplace undergoing fundamental change. It will work to ensure that the programs broaden, deepen and invigorate the professions they serve, working with them to innovate and lead.

Syllabus for I & II Semester

(EFFECTIVE FROM ACADEMIC YEAR 2021-22)

NOVEMBER 2021

BA Honours Degree Programme in Journalism and Mass Communication

Programme: Four year Integrated Master's Programme in Journalism and Mass Communication to be introduced under NEP

Programme Objectives:

1. Five-year Integrated Course in Journalism and Mass Communication would aim to familiarize students with all aspects of the field of Journalism. They become more proficient in both theory and practical skills of the media in general.

2. The programme would prepare the students 'ready-to-be recruited by media, advertising & corporate houses'. The content of the programme is designed to be dynamic and incorporate changes to meet requirements of the industry.

Learning Outcome:

1. The programme aims to churn out responsible media professionals who would contribute positively to the society.

2. The programme aims to facilitate better career opportunities for all those students of this course and get them ready to tackle challenges in the professional setup.

3. The programme aims to strike a balance between the dynamic working environment and professional ethics in the field of journalism and mass communication.

Need for Curriculum Development:

NEP 2020 initiative is intended to formulate a curriculum to bring about uniformity among the students studying in different Universities/Institutes. The need for the curriculum development in Journalism and Mass Communication emerges due to the following reasons:

Changing Media Scenario: The curriculum has been designed keeping with the industry requirements and includes subjects such as Multimedia, Photojournalism, Short Film Making, Creating Blogs and Vlogs, Mobile Journalism, Writing for Media, Producing News Bulletins for Radio and TV, Advertising and Corporate Communications, among several others. The rapid growth in media industry demands highly skilled human resource.

Credit transfer: Credit transfer is approved by the UGC and the Government that allows the students to transfer course from their existing university to a new UGC approved university. The same number of credits in all the Universities in Karnataka is the first step to towards the credit transfer from University to University.

Skill Enhancement: The new curriculum focuses more on hands on training, internship and thereby enhancing the skills of the students. It not only aims at producing responsible communication professionals but also citizens with a humane approach in day to day life. The papers like Writing for Media, Photo journalism, Computer Applications for Media etc., further helps in skill development of students.

Pedagogy:

The goal of Journalism and Mass Communication pedagogy is offered with an objective to train and prepare professionally skilled media persons and communication experts. It lends exposure to a wide range of meticulously framed syllabi.

Importance to Theory and Practical's and its application: The Journalism and Mass Communication curriculum focuses on innovative components in theory and practice, which in turn equips students to be full-fledged media men.

Utilization of ICT: The global media industry is in anticipation of ICT trained communication experts. To enhance critical and creative thinking amongst students, ICT tools are incorporated into the teaching methods which include research-led teaching, via presentations through smart classrooms, and practical productions.

Research-based and Research-led teaching: The Research Projects are introduced in the curriculum to strengthen the research concepts among the budding researchers. The students are introduced to various facets of Journalism and Mass Communication research such as print, electronic and new media research, global, health and political communication research, folk media, intercultural communication and research on development issues and so on in accordance to the relevance of the profession. The

students will be required to do research project on a topic of their choice under the supervision of a research guide.

Brain Storming Approach: Students will be involved in groups and individual discussions. This will help the students to develop and involve in the process of critical thinking and analysing. It further helps them in decision making and crisis management and also boosts self confidence.

Exit Options and Credit Requirements:

A Certificate / Diploma/ Bachelor Degree or Bachelor Degree with Honours in Journalism and Mass Communication is awarded at the completion of every progressive year.

Exit Option with	Certificate/Diploma/Degree/ Honours
Successful completion of First year (two semesters) of the Four years multidisciplinary undergraduate Degree programme.	Certificate in Journalism and Mass Communication
Successful completion of Second year(four semesters)of the four years multidisciplinary undergraduate Degree programme	Diploma in Journalism and Mass Communication
Successful completion of Three year (six semesters) of the four years multidisciplinary undergraduate degree Programme	Bachelor of Arts Degree in Journalism and Mass Communication
Successful completion of Four year (eight semesters) of the four years multidisciplinary undergraduate degree Programme	Bachelor of Arts Degree with Honours n Journalism and Mass Communication

A student will be allowed to enter/re-enter only after the odd semester and they can only exit after even semester. Re-entry at various as lateral academic programmes based on the above mentioned earned proficiency test records. The validity of the eared credit will be for a maximum period year or as specified by the academic bank of credits (ABC).

Acronyms Expanded	
AECC	Ability Enhancement Compulsory Course
DSCC	Discipline Specific Core Course
SEC/SB/VB	Skill Enhancement Course- Skill Based/Value Based
OEC	Open Elective Course
DSE	Discipline Specific Elective

Continuous Internal Evaluation and Semester End Examination:

Total marks for each course shall be based on continuous assessments and term end examinations. As per the decision of the Karnataka State Higher Education Council, it is necessary to have uniform pattern of Class Internal Assessment and Semester End examinations respectively, among all the Universities, their affiliated and autonomous colleges. The state level committee deliberated on the same and suggested the following pattern for the CIE Marks. The BOS has also approved to follow the same pattern.

B.A. Program in Journalism and Mass Communication
Semester with Choice Based Credit System (CBCS)
Discipline Specific Electives [DSE]

The Discipline Specific Core (DSC) Courses are offered in the First and Second semesters and one such course will be selected by a student from a set of courses specified for each of these semesters (Groups I and II in the Core (DSC) Courses in the First and Second semesters to allow the students some minimal element of choice.

Appendix- 1

NEW CBCS SYLLABUS APPROVED BY THE BOS

Sem ester	Course Code	Subject Code	Course Title	Credits	L	T	P
I	DSC-1		Introduction to Journalism	6	4	0	2
	OE-1		Writing for Media	3	3	0	0
II	DSC-1		Computer Applications for Media	6	4	0	2
	OE-2		Photo Journalism	3	3	0	0

Pattern of Examination – Distribution of Marks

Sem ester	Course Code	Course Title		**Theory**			**Practical**		
			Total Marks	Exam **C3**	IA Test **C1**	IA Blue Book/ Record **C2**	**Exam C3**	**Lab Test Assign ment C1**	**Rec ord C2**
I	DSC-1	Introduction for Journalism	150	60	20	20	25	10	15
	OE-1	Writing for Media	100	60	20	20	-	-	
II	DSC-2	Computer Applications for Media	150	60	20	20	25	10	15
	OE-2	Photo Journalism	100	60	20	20	80	10	10

Chairperson-BOS
HoD & Asst. Professor
Dept. of Journalism & Mass Communication
SBRR Mahajana First Grade College
Jayalakshmipuram, Mysuru – 570 012

COURSE PATTERN AND SCHEME OF EXAMINATION FOR BA AS PER NEP (2021-22 AND ONWARDS)

Semester	Course Code	Paper Title	Teaching Hours	Hours/ Week			Examination Pattern Max. & Min. Marks/Paper								Total Marks /Paper	Duration of Examination (Hours)		Credits		
							Theory				Practical									
				Theory	Practical	Total Hrs	Max	Min	IA	Total	Max	Min	IA	Total		Theory	Practical	Theory	Practical	Total
I	DSC 1	Introduction to Journalism	60	04	04	**08**	**60**	24	**40**	**100**	**40**	16	**10**	**50**	**150**	2.00	02	04	02	**06**
	OE 1	Writing for Media	45	03	00	**03**	**60**	24	**40**	**100**	**00**	00	**00**	**00**	**100**	2.00	00	03	00	**03**
II	DSC 2	Computer Applications for Media	60	04	04	**08**	**60**	24	**40**	**100**	**40**	16	**10**	**50**	**150**	2.30	02	04	02	**06**
	OE 2	Photo Journalism	45	03	00	**03**	**60**	24	**40**	**100**	**00**	00	**00**	**00**	**100**	2.00	00	03	00	**03**

BA Programme Structure Having Practical Core Courses

Sem	Discipline Specific Core Courses (DSCC)			Open Elective Courses (OEC/DSE)			Skill Enhancement Course						Ability Enhancement Compulsory Course (AECC)			Total Credits
							Skill Based			Value Based						
	Core Courses	L+T+P	Credit	Core Courses	L+T+P	Credit	Core Courses	L+T+P	Credit	Core Courses	L+T+P	Credit	Course	Hour	Credit	
I	DSCC A1	4+0+4	4+2=6	OEC 1	3+0+0	3				Health & Wellness		1+1=2	Kannada 1	04	3+0+3	
II	DSCC A2	4+0+4	4+2=6	OEC 2	3+0+0	3				Activity Based Course	1+0+2	1+1=2	Kannada 2	04	3+0+3	

EXIT OPTION WITH CERTIFICATE (48 CREDITS)

NOTE: 1. Two Hours of Practical = Two Hour, **2.** Students per batch = Nineteen (in case of students above 20 -35 make two batches). **3.** Geography, Psychology, Criminology and other subjects to follow the GOK norms. **4.** IA means Assignment, Seminar, Test, Group Discussion, Quiz, Workshop etc. **5.** OE paper – Minimum intake of the students for OE is at the discretion of the principal or as per the government norms.

(Structure for the remaining semesters will be formulated in the upcoming BOS meetings.)

DSC 1: INTRODUCTION TO JOURNALISM

Course Title and Code	DSC 1-Introduction to Journalism		
Programme Title	Bachelor of Arts in Journalism and Mass Communication		
Credits	06	Semester	I
Course Type	Core	Academic Year	2021-22

Pedagogy: Theory: 4 hrs / week
Practical: 4 hrs/ week

Sem/ Code	Paper Title	Week/ hour	Duration of Exami-nation	Exam Marks	IA C1+C2 Marks	Practical Exam	IA C1+C2 Marks	Total	Credits - 6		
									L	**T**	**P**
DSC-1	Introduction to Journalism	06	2 hrs	60	20 +20	25	10 + 15	150	4	0	2

Course Objectives:

- To introduce the concept of journalism and mass communication
- To familiarize the students with different facets of journalism
- To educate the students about the role of journalism in the development of society

Learning Outcome:

- At the end of the course, the students should be able
- To identify the distinct nature of journalism and its professional aspects, including career opportunities
- To familiarize and use terms specific to media
- To acquaint the students about the historical perspective of Indian journalism
- To upgrade the students with the current practices in journalism

Unit – I:

Definition, Meaning, Nature, Scope, Functions and Principles of Journalism, Types of Journalism – Magazine, Business, Environment, Sports, Entertainment, Moffussil, Citizen Journalism, MoJo, Glossary of Journalism, Introduction to Mass Media, Types of Mass Media –Traditional, Folk Media, Print Media, Electronic Media and New Media.

Unit –II:

Brief History of Indian Journalism – Evolution & Growth with special references to James Augustus Hickey, James Silk Buckingham, Raja Ram Mohan Roy, Mahatma Gandhi, Dr. B.R. Ambedkar, Bal Gangadhar Tilak and Annie Besant, History of Centenarian Newspapers – The Hindu, Times of India, The Tribune, Amrit Bazar Patrika and The Statesman.

Unit – III:

Brief History of Kannada Journalism with special reference to Hermann Moegling, M. Venkatakrishnaiah, DV Gundappa, Mohare Hanumantha Rao, and P R Ramaiah, H.K.Veeranna Gowda. Contribution of Women Journalists – Nanjanagudu Thirumalamba, Kalyanamma.

Unit – IV:

Career Opportunities, Qualification, Duties, Responsibilities of Journalists, Professional Code of Ethics, Role of Press in Democracy, Theories of Press - Authoritarian, Libertarian, Social Responsibility, Soviet Media Theory, Development Media Theory and Democratic Participation Theory.

Practical Component:

1. Letters to the Editor – Publish 2 letters in any of the Local or National Dailies.
2. Make a comparative analysis of any two regional/national newspapers.
3. Compare any two magazines.
4. Analyze the contribution of any journalistic personality from Unit III
5. Analyze a news channel of your choice (regional/national).

Books for Reference:

1. Theory and Practice of Journalism - B N Ahuja
2. Professional Journalism - M V Kamath
3. Mass Communication & Journalism in India - Keval J Kumar
4. Adhunika Bharathiya Parthrikodhyma - Shree L Bhandarkar
5. Professional Journalist John Hohenberg
6. Mass Communication & amp; Journalism in India - Mehta
7. Eradu Dadagala Nadhuve – Niranjana Vanalli
8. Pathrikodyama - Ranganath Rao
9. History of Indian Journalism - S Natarajan
10. Indian Journalism - Nadig Krishnamurthy
11. Journalism in India- R.Parthasarathy
12. New History of Indian Journalism - G N S Raghavan
13. History of Press, Press Laws & Communication- B N Ahuja
14. Karnataka Pathrika Ithihasa Vol. 1,2,3 - Karnataka Pathrika Academy
15. Indian Journalism - K M Srivastava

OE 1: WRITING FOR MEDIA

Course Title and Code	OE 1-Writing for Media		
Programme Title	Bachelor of Arts in Journalism and Mass Communication		
Credits	03	Semester	I
Course Type	Core	Academic Year	2021-22

Pedagogy:
Theory: 3 hrs / week

Sem/ Code	Paper Title	Week/ hour	Duration of Exami-nation	Exam Marks	IA C1+C2 Marks	Practical Exam	IA C1+C2 Marks	Tot al	Credits - 3		
									L	**T**	**P**
OE-1	Writing for Media	03	2 hrs	60	20 +20	-	-	100	3	0	0

Course Objectives:

- Familiarizing students with writing skills for various media..
- To instill interest among students for media writing
- To equip the students with recent trends in media writing.

Learning Outcome:

- Learning various writing techniques for different media.
- Creating content for various social media platforms.
- Students become industry-ready.

Unit I:

Print Media: Introduction to Writing for Print Media, Principles & Techniques of Writing for Print Media. – Clarity, Brevity, Simplicity, Readability and Accuracy.

Forms of Journalistic Writing - News Writing – Inverted Pyramid, Writing Columns, Articles, Features, Editorials, Letters to the Editor, Preparing Press Releases.

Unit-II:

Electronic Media:

Radio: Writing for Radio, Language and Grammar, Writing News Scripts, Preparing Ad Scripts, Radio Jockey Skills.

Television: Basic Principles and Techniques of TV Writing, Elements of TV Scripting, Language and Grammar, Writing News Scripts.

Unit-III:

New Media: Writing Techniques for New Media, Writing for Social Media (Facebook, Twitter, LinkedIn, Instagram), Introduction to Blogging and Vlogging, Current Trends in Web Journalism.

IA / Lab Components

1. Two Letters to the Editor to be published in any registered newspaper.
2. Present a two minute long radio segment on a topic of your choice.
3. Prepare a news script of three minute duration.
4. Create a blog/vlog on any two topics of your choice. (Eg: Health, Cooking, Travel, Fashion)
5. Write a travel or a personality feature.

Books for Reference:

1. History of Indian Journalism: Nadig Krishnamurthy- University of Mysore press
2. Dilwali, Ashok. (2002). All about photography. New Delhi: National Book Trust.
3. Kobre, Kenneth. (2000). Photojournalism. The professional approach (4th Ed). London: Focal Press
4. Horton, Brian. (2000). Guide to photojournalism. New York: McGraw-Hill
5. Chapnick, Howard. (1994). Truth needs no ally: Inside photojournalism. New York: University of Missouri Press
6. British Press Photographers Association. (2007). 5000 Days: Press photography in a changing world. London: David & Charles.
7. Nair, Archana. (2004). All about photography. New Delhi: Goodwill Publishing House.

DSC 2: COMPUTER APPLICATIONS FOR MEDIA

Course Title and Code	DSE 2- Computer Applications for Media		
Programme Title	Bachelor of Arts in Journalism and Mass Communication		
Credits	06	Semester	II
Course Type	Core	Academic Year	2021-22

Pedagogy: Theory: 4 hrs / week
Practical: 4 hrs/ week

Sem/ Code	Paper Title	Week/ hour	Duration of Exami-nation	Exam Marks	IA C1+C2 Marks	Practical Exam	IA C1+C2 Marks	Total	Credits - 6		
									L	T	P
DSC-2	Computer Applications for Media	06	2 hrs	60	20 +20	25	10 + 15	150	4	0	2

Course Objectives:

- To introduce students to the basics of computer.
- To familiarize the students to the applications of computers in print and electronic journalism
- To facilitate the students to learn the practical applications of computers at different levels in media.

Learning Outcome:

- Students will be equipped with computer related media skills.
- Students will get hands on experience on various computer applications.
- Students will independently be able to create new media content.

Unit I:

Introduction to Computers, Basic Hardware, Computer and Newspaper Production, Softwares for Newspaper Production, Internet, DTP, PageMaker, Adobe Indesign, Baraha and Nudi.

Unit II:

MS Office: Word, Power Point, Excel – Creating Charts, Graphs, Tables, Use of Computers in Reporting, Editing, Pagination and Printing.

Unit III:

Web Journalism, Techniques of Web Writing, Illustrations and Web Designing, Language, Presentation, Multimedia, Online Newspapers, Web Portals

Unit IV:

New Media – Definition and Characteristics, Types of New Media – Websites, Blogs, Vlogs, Email, Social Media Networks & OTT Platforms, Types, Techniques & Softwares for Blogging & Vlogging, Cyber Crime, Web Glossary.

Practical Component:

1. Create a blog/vlog on a topic of your choice.
2. Compare any two news/ sports portal of your choice.
3. A review on any recent OTT content of your choice.
4. Present two recent case studies on Cyber Crime.
5. Prepare a lab journal of 2 pages (A3 size).

Books for Reference:

1. Sunder, R., 2000. Computers Today Ed.2, JohnWiley,
2. Benedict, M., Cyberspace: First steps, ed. Cambridge, MA. MIT Press.
3. Macintosh, Advanced Adobe Photoshop, Adobe publishers.
4. Satyanarayana, R., Information Technology and its facets, Delhi, Manak2005.
5. Smith, Gene. Tagging: People-powered Metadata for the Social Web, Indianapolis, Indiana: New Riders Press, 2008.

OE 2: PHOTO JOURNALISM

Course Title and Code	OE-2 Photo Journalism		
Programme Title	Bachelor of Arts in Journalism and Mass Communication		
Credits	03	Semester	II
Course Type	Core	Academic Year	2021-22

Pedagogy:
Theory: 3 hrs / week

Sem/ Code	Paper Title	Week/ hour	Duration of Exami-nation	Exam Marks	IA C1+C2 Marks	Practical Exam	IA C1+C2 Marks	Total	Credits - 3		
									L	**T**	**P**
OE-2	Photo Journalism	03	2 hrs	60	20 +20	-	-	100	3	0	0

Course Objectives:

- To attract students towards photojournalism
- To familiarize the students to techniques of photography and photojournalism
- To give a practical knowledge in the field of photography

Learning Outcome:

- Students will get hands on experience on visual communication.
- Students will learn the significance of pictures in various media.
- Students will upgrade their knowledge on various photo- editing software.

Unit-I

Concept of Photography, Evolution of Photography, Different Types of Cameras--Manual, Digital and Phone Cameras, Types of Photography – Portrait, Landscape, Street Photography, Wildlife, News Photography, Celebrity Photography.

Unit-II

Meaning of Photo Journalism, Qualifications, Role and Responsibilities of Photo Journalists, Photo Features, Techniques of Photo Editing, Caption Writing, Leading Press Photographers and Photo Journalists in India.

Unit-III

Mobile Journalism - Using Smartphones for News Reporting, Photo Editing on Smart Phones, Publishing News Content using Smartphones on Digital Platforms, Techniques of Short Film Making.

IA / Lab Component:

1. Capture Food Photos (5), News Photos (5) Portraits (5) Human Interest Pictures/Street Photography (5)
2. Edit & caption 10 photographs
3. Create a thematic Photo Montage/Feature with 15 photographs.
4. Present a video report on a current issue of your choice.
5. Produce a minimum of a three minute long Short Film.

Books for Reference:

1. Milten Feinberg- Techniques of Photo Journalism
2. Michel Long ford- Basic Photography
3. Tom Ang- Digital Photography- Master classes
4. N Manjunath- Chayachitra Patrikodyama
5. Cyernshem G R- History of Photography

QUESTION PAPER PATTERN

DSC THEORY:

Time: 2 hours **Marks: 60**

Instructions:
All parts are mandatory.

PART A

Answer any FOUR of the following: 4 x2=8

1.
2.
3.
4.
5.
6.

PART B

Answer any FOUR of the following: 4x5=20

7.
8.
9.
10.
11.
12.

PART C

Answer any FOUR of the following: 4x8=32

13.
14.
15.
16.
17.
18.

NOTE: Questions must be prepared such that all units are covered.

DSC PRACTICAL

Time: 2 hours **Marks: 25**

NOTE: 1. Questions for practical examination should be in the form of applied knowledge of the theory part. The question paper should be prepared by BoE for 25 marks. 2. A practical record should be evaluated by both internal and external examiner for the remaining 10+15 marks.

QUESTION PAPER PATTERN

DSE THEORY:

Time: 2 hours **Marks: 25**

Instructions:
All parts are mandatory.

PART A

Answer any FOUR of the following: 4x2=8

1.
2.
3.
4.
5.
6.

PART B

Answer any TWO of the following: 2x3=6

9.
10.
11.
12.

PART C

Answer any THREE of the following: 3x4=12

13.
14.
15.
16.
17.

NOTE: Questions must be prepared such that all units are covered.

DSC PRACTICAL

Time: 2 hours **Marks: 25**

NOTE: 1. Questions for practical examination should be in the form of applied knowledge of the theory part. The question paper should be prepared by BoE for 40 marks. 2. A practical record should be evaluated by both internal and external examiner for the remaining 10 marks.

CURRICULUM STRUCTURE FOR UNDERGRADUATE DEGREE PROGRAM

(Inputs to this document: List of Core and GE Courses of the Program)

Course Objectives (not exceeding three per course)

Name of the Degree: BA **Specialization: Journalism and Mass Communication Program Articulation Matrix:**

This matrix lists all course papers **(DSC + GEC).** It include all types of courses (Theory, Lab, Tutorial, Project, Internships that every student of the course). Electives are also a part of this list.

Sem	Name of the course	Course Objectives (not exceeding three per course)	Pre-requisite course(s)	Pedagogy	Assessment Marks
1	Introduction to Journalism **(DSC1)**	• To introduce the concept of journalism and mass communication. • To familiarize the students with different facets of journalism • To educate the students about the role of journalism in the development of society	PUC	Practical assignments	**Theory – 60** **IA – 40;** C1-20 + C2-20 Test - 20 Record –10 Viva / Project - IA- 10 **Practical: 50** Practical Exam - 25 Practical Record– 10 Practical IA -15 **Total – 100 (T) + 50(P)=150**
1	Writing for Media **(OE1)**	• Familiarizing students with writing skills for various media. • To instill interest among students for media writing • To equip the students with recent trends in media writing.		Lab / Field assignments	**Theory – 60** **IA – 40;** C1 20 + C2 20 Test - 20 Record –10 Lab / Field / Project IA- 10 **Total – 60 + 40 = 100**
2	Computer applications for media **(DSC2)**	• To introduce students to the basics of computer. • To familiarize the students to the applications of computers in print and electronic journalism • To facilitate the students to learn the practical applications of computers at different levels in media.		Practical signments	**Theory – 60** **IA – 40;** C1-20 + C2-20 Test - 20 Record –10 Viva / Project - IA- 10 **Practical: 50** Practical Exam - 25 Practical Record– 10 Practical IA -15 **Total – 100 (T) + 50(P)=150**
2	Photo Journalism **(OE2)**	• To attract students towards photojournalism • To familiarize the students to techniques of photography and photojournalism • To give a practical knowledge in the field of photography		Lab / Field assignments	**Theory – 60** **IA – 40;** C1 20 + C2 20 Test - 20 Record –10 Lab / Field / Project IA- 10 **Total – 60 + 40 = 100**

NOTE: The Course Objectives (DSC + GEC) for the remaining semesters will be formulated during the syllabus framing process in the upcoming BOS Meeting.

CURRICULUM STRUCTURE FOR UNDERGRADUATE DEGREE PROGRAM

(Inputs to this document: List of Core Courses of the Program)

Learning Outcome

Name of the Degree: BA Specialization: Journalism and Mass Communication

Program Articulation Matrix:

This matrix lists all course papers **(DSC + OE).** It include all types of courses (Theory, Lab, Tutorial, Project, Internships that every student of the course). Electives are also a part of this list.

Sem	Name of the course	Leaning Outcome	Pre-requisite course(s)	Pedagogy	Assessment Marks
1	Introduction to Journalism **(DSC1)**	• To identify the distinct nature of journalism and its professional aspects, including career opportunities • To familiarize and use terms specific to media • To acquaint the students about the historical perspective of Indian journalism & upgrade the students with the current practices in journalism	PUC	Practical assignments	**Theory – 60** **IA – 40;** C1-20 + C2-20 Test - 20 Record –10 Viva / Project - IA- 10 **Practical: 50** Practical Exam - 25 Practical Record– 10 Practical IA -15 **Total – 100 (T) + 50(P)=150**
1	Writing for Media **(OE1)**	• Learning various writing techniques for different media. • Creating content for various social media platforms. • Students become industry-ready.		Lab / Field assignments	**Theory – 60** **IA – 40;** C1 20 + C2 20 Test - 20 Record –10 Lab / Field / Project IA- 10 **Total – 60 + 40 = 100**
2	Computer Applications for Media **(DSC2)**	• Students will be equipped with computer related media skills. • Students will get hands on experience on various computer applications. • Students will independently be able to create new media content.		Practical signments	**Theory – 60** **IA – 40;** C1-20 + C2-20 Test - 20 Record –10 Viva / Project - IA- 10 **Practical: 50** Practical Exam - 25 Practical Record– 10 Practical IA -15 **Total – 100 (T) + 50(P)=150**
2	Photo Journalism **(OE2)**	• Students will get hands on experience on visual communication. • Students will learn the significance of pictures in various media. • Students will upgrade their knowledge on various photo-editing software.		Lab / Field assignments	**Theory – 60** **IA – 40;** C1 20 + C2 20 Test - 20 Record –10 Lab / Field / Project IA- 10 **Total – 60 + 40 = 100**

NOTE: The Learning Outcome (DSC + GEC) for the remaining semesters will be formulated during the syllabus framing process in the upcoming BOS Meeting.

Model Curriculum

Name of the Degree Program: BA

Discipline Core: Journalism and Mass Communication/ Electronic Media

Total Credits for the Program: 176 Starting year of implementation: 2021-22

Program Outcome:

By the end of the program's the students will be able to:

(Refer to literature on outcome-based education (OBE) for details on Program Outcomes)

1. The programme ensures responsible citizens to the society as a product
2. The programme will facilitate job opportunities for all those who invest five years in attending this programme
3. The programme ensures that the products of the programme are not only good in technology but also respect the ethics of the field.

Assessment:

Weightage for assessments (in percentage)

Type of Course	Formative Assessment / IA	Summative Assessment
Theory	40	60
Practical	10	40
Projects	40	60
Experiential Learning (Internships etc.)		100

Education Society (R)
Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA

Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

Department of Journalism & Mass Communication

BA – III & IV SEMESTER (NEP) SYLLABUS

BOARD OF STUDIES

III & IV Semester

(As per NEP-2020 Regulations)

UG ☑

PG ☐

2022-23

Education Society (R)
Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore,
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NEP (CBCS) Syllabus for III & IV Semester

(Effective from Academic Year 2022-22)

SEPTEMBER 2022

BA Honours Degree (NEP) Programme in Journalism and Mass Communication

Programme: Four year Integrated Degree Programme in Journalism and Mass Communication to be introduced under NEP

Programme Objectives:

1. Four-year Integrated Degree Course in Journalism and Mass Communication would aim to familiarize students with all aspects of the field of Journalism and Mass Communication. They become more proficient in both theory and practical skills of the media in general.

2. The programme would prepare the students 'ready-to-be recruited by media, advertising, PR & corporate houses'. The content of the programme is designed to be dynamic and incorporate changes to meet requirements of the industry.

Learning Outcome:

1. The programme aims to churn out responsible media professionals who would contribute positively to the society.

2. The programme aims to facilitate better career opportunities for all those students of this course and get them ready to tackle challenges in the professional setup.

3. The programme aims to strike a balance between the dynamic working environment and professional ethics in the field of journalism and mass communication.

Need for Curriculum Development:

NEP 2020 initiative is intended to formulate a curriculum to bring about uniformity among the students studying in different Universities/Institutes. The need for the curriculum development in Journalism and Mass Communication emerges due to the following reasons:

Changing Media Scenario: The curriculum has been designed keeping with the industry requirements and includes subjects such as Multimedia, Photojournalism, Short Film Making, Creating Blogs and Vlogs, Mobile Journalism, Writing for Media, Producing News Bulletins for Radio and TV, Advertising and Corporate Communications, among several others. The rapid growth in media industry demands highly skilled human resource.

Credit transfer: Credit transfer is approved by the UGC and the Government that allows the students to transfer course from their existing university to a new UGC approved university. The same number of credits in all the Universities in Karnataka is the first step to towards the credit transfer from University to University.

Skill Enhancement: The new curriculum focuses more on hands on training, internship and thereby enhancing the skills of the students. It not only aims at producing responsible communication professionals but also citizens with a humane approach in day to day life. The papers like Writing for Media, Photo journalism, Computer Applications for Media etc., further helps in skill development of students.

Pedagogy:

The goal of Journalism and Mass Communication pedagogy is offered with an objective to train and prepare professionally skilled media persons and communication experts. It lends exposure to a wide range of meticulously framed syllabi.

Importance to Theory and Practical's and its application: The Journalism and Mass Communication curriculum focuses on innovative components in theory and practice, which in turn equips students to be full-fledged media men.

Utilization of ICT: The global media industry is in anticipation of ICT trained communication experts. To enhance critical and creative thinking amongst students, ICT tools are incorporated into the teaching methods which include research-led teaching, via presentations through smart classrooms, and practical productions.

Research-based and Research-led teaching: The Research Projects are introduced in the curriculum to strengthen the research concepts among the budding researchers. The students are introduced to various facets of Journalism and Mass Communication research such as print, electronic and new media research, global, health and political communication research, folk media, intercultural communication and research on development issues and so on in accordance to the relevance of the profession. The

Students will be required to do research project on a topic of their choice under the supervision of a research guide.

Brain Storming Approach: Students will be involved in groups and individual discussions. This will help the students to develop and involve in the process of critical thinking and analysing. It further helps them in decision making and crisis management and also boosts self confidence.

Exit Options and Credit Requirements:

A Certificate / Diploma/ Bachelor Degree or Bachelor Degree with Honours in Journalism and Mass Communication is awarded at the completion of every progressive year.

Exit Option with	Certificate/Diploma/Degree/ Honours
Successful completion of First year (two semesters) of the Four years multidisciplinary undergraduate Degree programme.	Certificate in Journalism and Mass Communication
Successful completion of Second year(four semesters)of the four years multidisciplinary undergraduate Degree programme	Diploma in Journalism and Mass Communication
Successful completion of Three year (six semesters) of the four years multidisciplinary undergraduate degree Programme	Bachelor of Arts Degree in Journalism and Mass Communication
Successful completion of Four year (eight semesters) of the four years multidisciplinary undergraduate degree Programme	Bachelor of Arts Degree with Honours n Journalism and Mass Communication

A student will be allowed to enter/re-enter only after the odd semester and they can only exit after even semester. Re-entry at various as lateral academic programmes based on the above mentioned earned proficiency test records. The validity of the eared credit will be for a maximum period year or as specified by the academic bank of credits (ABC).

Acronyms Expanded	
AECC	Ability Enhancement Compulsory Course
DSCC	Discipline Specific Core Course
SEC/SB/VB	Skill Enhancement Course- Skill Based/Value Based
OEC	Open Elective Course
DSE	Discipline Specific Elective

Continuous Internal Evaluation and Semester End Examination:

Total marks for each course shall be based on continuous assessments and term end examinations. As per the decision of the Karnataka State Higher Education Council, it is necessary to have uniform pattern of Class Internal Assessment and Semester End examinations respectively, among all the Universities, their affiliated and autonomous colleges. The state level committee deliberated on the same and suggested the following pattern for the CIE Marks. The BOS has also approved to follow the same pattern.

B.A. Program in Journalism and Mass Communication
Semester with National Education Policy (NEP-2020)

Appendix- 1

NEW CBCS SYLLABUS APPROVED BY THE BOS

Semester	Course Code	Subject Code	Course Title	Credits	L	T	P
III	DSCC-3		News Reporting and Analysis (with Practical)	6	4	0	2
	OE-3		Feature Writing and Freelancing	3	3	0	0
IV	DSCC-4		News Processing and Editing (with Practical)	6	4	0	2
	OE-4		Translation for Media	3	3	0	0

Pattern of Examination – Distribution of Marks

Semester	Course Code	Course Title	Total Marks	THEORY			PRACTICAL		
				Test IA Blue Book/ Record **C1**	Test IA Blue Book/ Record **C2**	Exam **C3**	**Lab Test Assignment C1**	**Record C2**	**Exam C3**
I	DSCC-3	News Reporting and Analysis (with Practical)	150	20	20	60	10	15	25
	OE-3	Feature Writing and Freelancing	100	20	20	60	-		-
II	DSCC-4	News Processing and Editing (with Practical)	150	20	20	60	10	15	25
	OE-4	Translation for Media	100	20	20	60	-	-	-

COURSE PATTERN AND SCHEME OF EXAMINATION FOR BA AS PER NEP (2022-23 AND ONWARDS)

Semester	Course Code	Paper Title	Teaching Hours	Hours/Week			Examination Pattern Max. & Min. Marks/Paper								Total Marks /Paper	Duration of Examination (Hours)		Credits		
							Theory				Practical									
				Theory	Practical	Total Hrs	Max	Min	IA	Total	Max	Pral-Exm	IA	Total		Theory	Practical	Theory	Practical	Total
III	DSCC 3	NEWS REPORTING AND ANALYSIS	60	04	04	**08**	60	24	20+20 = 40	**100**	50	25	10 + 15 = 25	**50**	**150**	2.30 hrs	3 hrs	04	02	**06**
	OE 3	FEATURE WRITING AND FREELANCING	30	03	00	**03**	60	24	20+20 = 40	**100**	-	-	-	**-**	**100**	2.30 hrs	---	03	--	**03**
IV	DSCC 4	NEWS PROCESSING AND EDITING	60	04	04	**08**	60	24	20+20 = 40	**100**	50	25	10 + 15 = 25	**50**	**150**	2.30 hrs	3 hrs	04	02	**06**
	OE 4	TRANSLATION FOR MEDIA	30	03	00	**03**	60	24	20+20 = 40	**100**	-	-	-	**-**	**100**	2.30 hrs	---	03	---	**03**

BA Journalism and Mass Communication Programme Structure Having Practical Core Courses

Semester	Course Code	Paper Title	Teaching Hours	Hours/ Week			Examination Pattern Max. & Min. Marks/Paper								Total Marks /Paper	Duration of Examination (Hours)		Credits		
							Theory				Practical									
				Theory	Practical	Total Hrs	Max	Min	IA	Total	Max	Pral-Exm	IA	Total		Theory	Practical	Theory	Practical	Total
III	DSCC3	NEWS REPORTING AND ANALYSIS	60	04	04	**08**	60	24	40	**100**	50	25	25	**50**	**150**	2.30hrs	2hrs	04	02	**06**
	OE 3	FEATURE WRITING AND FREELANCING	30	03	00	**03**	60	24	40	**100**	-	-	-	**-**	**100**	2.30hrs	---	03	--	**03**
IV	DSCC 4	NEWS PROCESSING AND EDITING	60	04	04	**08**	60	24	40	**100**	50	25	25	**50**	**150**	2.30hrs	2hrs	04	02	**06**
	OE 4	TRANSLATION FOR MEDIA	30	03	00	**03**	60	24	40	**100**	-	-	-	**-**	**100**	2.30hrs	---	03	---	**03**

EXIT OPTION WITH DIPLOMO (48 CREDITS)

NOTE: 1. Two Hours of Practical = Two Hours, **2.** Students per batch = Nineteen (in case of students above 20 -35 make two batches). **3.** Geography, Psychology, Criminology and other subjects to follow the GOK norms. **4.** IA means Assignment, Seminar, Class Room Presentation, Case studies, Participatory and Industry Integrated learning/Industrial visits , Practical activities/Academic events/Symposia, for Test, Group Discussion, Quiz, Workshop etc.

5. OE paper – Minimum intake of the students for OE is at the discretion of the principal or as per the government norms.

6. IA=C1-20, C2-20(40)

(Structure for the remaining semesters will be formulated in the upcoming BOS meetings.)

DSC 3: NEWS REPORTING AND ANALYSIS

Course Title and Code	DSCC 3- NEWS REPORTING AND ANALYSIS (With Practical) Subject Code :		
Programme Title	Bachelor of Arts in Journalism and Mass Communication		
Credits	06	Semester	III
Course Type	Core	Academic Year	2022-23

Pedagogy: Theory: 4 hrs / Week

Total Number of Working Hours : 64 Hours

Sem/ Code	Paper Title	Week/ hour	Duration of Exami-nation	Exam Marks C3	IA C1+C2 Marks	Duration of Practical Exam	Practical Exam C3	Practical IA C1+C2 Marks	Total	**Credits - 6**		
										L	**T**	**P**
DSCC 3	NEWS REPORTING AND ANALYSIS (With Practical)	06	2½ hrs	60	20 +20	3 hrs	25	10 + 15	150	4	0	2

Practical: 2 hrs / week (2 +2 = 4 hrs)

Course Objectives:

- To introduce the concept News.
- To familiarize the students with Reporting Methods in General and Reporting for Print & Electronic Media.
- To educate the students about the Types and Techniques of Reporting.

Learning Outcome:

- To identify events and issues and turn them into news.
- To events and issues and turn them into news.
- To make use of career opportunities in reporting.
- To upgrade the students with the current skill and practices in Media.

Unit – I:

News: Definitions, nature, concepts, elements and values. **Types of source:** Hard News and Soft News. **Sources of News**: News agencies and internet as a source. Techniques of news gathering; Wire service and news flow; Structure and components of news story; News writing skills; Inverted pyramid; Leads and types of Leads in news story. **16 hrs.**

Unit –II:

Reporting Process: Principles of reporting, functions, qualities and responsibilities of a reporter. Professional norms and ethics. Cultivation of news sources. Techniques of reporting: investigative, interpretative, in-depth, and narrative. Types of reporting: Civic, political, crime, sports, business, court reporting, International reporting, mofussil, beat and weather reporting. **16 hrs.**

Unit – III:

Types of news events: Speeches, seminars & conferences, press conferences, demonstrations, rallies and agitations. Reporting governmental and non-governmental communications; Covering communal riots and crimes. Interviewing: principles, importance, techniques and types of news interviews, difference between print, television and broadcast interviews. **16 hrs.**

Unit – IV:

Specialized reporting: Legislative, court, science and technology, defence, human rights, women and child, health, sports, tourism, education, financial reporting, agriculture, lifestyle, cinema and culture. **16 hrs.**

DSCC3 - NEWS REPORTING AND ANALYSIS (PRACTICAL COMPONENT)

1. Preparing the events news reports -05
   (Events are held in your college/Campus/university)
2. Collect five different lead types from different newspapers-05
3. Revise and rewriting special news stories-05
4. Pick a common lead news story appeared in two different newspapers and analyse.
5. Preparation of press notes & press release-02
6. Press conference reports- 02
   (Students is attending the press conference in your place and preparing the news reports)
7. Photographs and Captions-05
   (Students have shooting any events in your college and given captions)

Assignments

1. Analyze at least 5 newsworthy events for news elements
2. Interview any personalities of your choice
3. Write at least 5 news scripts of different types
4. 2 assignments of specialized reporting
5. 2 assignments each of crime, sports and political news

Books for Reference:

1. **Bill Kovach and Tom Rosenstiel,** (2001) The Elements of Journalism, Three Rivers Press.
2. **Brooks, B. S., Pinson, J. L., & Wilson, J. G.** (2013). "Writing as a Journalist," chapter 11 in Working with Words: A handbook for media writers and editors. Boston; New York: Bedford / St. Martin's.
3. **Deborah Potter**, (2006) Handbook of Independent Journalism, Bureau of International-Information Programs, U.S. Department of State.
4. **Brooks, B. S., Kennedy, G., Moen, D. R., &Ranly, D**. (2014). The inverted pyramid. In News reporting and writing (11th edition). Boston; New York: Bedford / St. Martin's.
5. **Lorenz, Alfred L, and John Vivian.** (1995) News: Reporting and Writing Pearson Education POD.
6. **Izard, Ralph S.** (1994) Fundamentals of News Reporting, 6th edition. Dubuque, Iowa: Kendall/Hunt.
7. **Melvin Mencher**, (2010), News Reporting and Writing, 12th Ed McGraw-Hill, New York.
8. **The Missouri Group**. (2014) News Reporting and Writing, 11th edition, Bedford-St. Martin.
9. **Steward, Charles J., and William B. Cash, Jr.** (2003) Interviewing: Principles and Practices; Boston: McGraw-Hill.
10. **Tompkins, A**. (2012). The art of the interview. In Aim for the heart: Write, shoot, report and produce for TV and multimedia (pp. 77-96). Washington, D.C.: CQ Press.

OE 3 – FEATURE WRITING AND FREELANCING

Course Title and Code	OE 3- Feature Writing & Freelancing : Subject Code :		
Programme Title	Bachelor of Arts in Journalism and Mass Communication		
Credits	03	Semester	III
Course Type	Core	Academic Year	2022-23

Pedagogy:
Theory: 3 hrs / week

Total Number of Working Hours: 48 Hours

Sem/ Code	Paper Title	Week/ hour	Duration of Exami-nation	Exam Marks	IA C1+C2 Marks	Practical Exam	IA C1+C2 Marks	**Total**	**Credits - 3**		
									L	**T**	**P**
OE-3	Feature Writing & Freelancing	03	2½ hrs	60	20 +20	-	-	**100**	3	0	0

Course Objectives:

- To introduce various aspects of Feature Writing.
- To familiarize with trends in Feature Writing and Freelancing.
- To impart skills in news / feature writing.

Learning Outcome:

- To write features for print media.
- To use professional skills in structuring and presenting features.
- To write with social concern.

Allotted Hours

Unit I:

Introduction Feature: Definition and Characteristics – Structure of a Feature Difference between news, features, articles and columns– Process and techniques of feature writing, feature headlines, Sources of Feature, Feature Syndicates. **16 hrs.**

Unit-II:

Types of features: Different feature articles – science feature, news feature, cultural feature, environmental feature, lifestyle feature; Modern trends in feature writing; Reviews and its Types – Film, Theatre and Book. **16 hrs.**

Unit-III:

Freelancing – Meaning, Definition and Scope of Freelancing, Freelancing as a profession, Qualities of a Freelancer, Trends in Freelancing, Legal and ethical aspects of freelancing, Scope of freelancing in print and electronic media, freelancing in online media **16 hrs.**

IA / Assignments

1. Letters to the Editor to be published in any registered newspaper.
2. Write an Article on any Features.
3. Write a Review on Film / Theatre / Book.

Books for Reference:

1. History How to Criticize books- O Hinkle and J Henry
2. Effective Feature Writing – C A Sheenfeld
3. Modern Feature Writing – H F Harrington and Elmer Scott Watson
4. Writing Feature Articles – A Practical Guide to methods and Markets –Hennessey
5. Before My Eyes: Film Criticism and Comment –Kauffmann
6. Beyond the Facts – A Guide to the Art of Feature Writing
7. Freelancing – R K Murthy
8. Suddiyashte Alla – Niranjana Vanalli

DSCC 4: NEWS PROCESSING AND EDITING

Course Title and Code	DSE 4- News Processing & Editing : Subject Code :		
Programme Title	Bachelor of Arts in Journalism and Mass Communication		
Credits	06	Semester	IV
Course Type	Core	Academic Year	2022-23

Pedagogy: Theory: 4 hrs / week
Practical: 2 hrs/ week (2 hrs+2 hrs = 4 hrs)

Total Number of Working Hours : 64 Hours

Sem/ Code	Paper Title	Week/ hour	Duration of Exami-nation	Exam Marks C3	IA C1+C2 Marks	Duration of Practical Exam	Practical Exam C3	Practical IA C1+C2 Marks	Total	Credits - 6		
										L	**T**	**P**
DSCC 4	News Processing & Editing	06	2½ hrs	60	20 +20	3 hrs	25	10 + 15	150	4	0	2

Course Objectives:

- To introduce the basics of editing and publication
- To provide an overview of the editing process
- To train in writing and editing techniques

Learning Outcome:

- To understand editing and publication process
- To write and edit news stories.
- To design newspaper / magazine pages.

Allotted Hours

Unit I:

Introduction: Editing- Definitions, importance, principles, functions and techniques of editing. Types of editing; Editing in the age of convergence and software application; Importance of design in print media, Visualizing a page; Types of designs; Designing special supplements; Data and Information graphics. **16 hrs.**

Unit II:

Techniques of Editing: Editorial Page; Editorial writing and its significance; Types of Editorials; Op-ed Page, Letters to the Editor, Middles; Headlines – functions and types; Photo Editing and Caption Writing; Column writing and types of columns; Ethical Aspects of Editing **16 hrs.**

Unit III:

Concept of Newspaper Design: Types of Newspaper Layouts, Principles of Designing, Style Shee Dummy; Front Page Design, Pagination software; Trends in pagination; Translation - Meaning, Principles, Techniques and Types. **16 hrs.**

Unit IV:

Newsroom Setup: Organizational structure and functions of a typical newsroom; Editor; Role and responsibilities of an Editor; Executive Editor; News Editor; Chief Sub-editor, Sub-editor. **16 hrs.**

Practical Component:

1. Write an editorial on any current issue.
2. Write a letter to the editor about any civic issues.
3. Translate a news report from a Source Language to Target Language.
4. Choose 5 news stories and provide suitable headlines.
5. Capture 5 photographs & caption them.

Assignments:

1) Editing at least 5 stories
2) Rewriting at least 5 poorly written stories
3) Headline writing and caption writing exercises
4) Designing news paper and magazine pages
5) Editing at least 5 wire service stories; Rewriting poorly drafted copies

Books for Reference:

1. The Elements of Editing: a modern guide for editors and journalists by Arthur Plotnik: Collier Macmillan
2. Outline of Editing by K M Joseph: Anmol Publication
3. Advanced Journalism by Adarsh Kumar Varma: Har-Anand Publications Ltd
4. Words on Words by John M Bremner: Columbia University Press
5. The Glamour of Grammar: A Guide to Magic and Mystery of Practical English by Roy Peter Clark: Little, Brown company
6. Editing and Design by Harold Evans:William Heinemann Ltd
7. News Reporting and Editing by K M Shrivastva: Sterling Publishers Private Limited
8. Computer Application for Journalism by Rahul Singhai: EssEss Publication
9. Editing: A handbook for Journalists by T J S George; IIMC Publication
10. Editing by B N Ahuja and S SChhabra: Surjeet Publication

OE 4: TRANSLATION FOR MEDIA

Course Title and Code	OE-4 Translation for Media :		Subject Code :
Programme Title	Bachelor of Arts in Journalism and Mass Communication		
Credits	03	Semester	IV
Course Type	Core	Academic Year	2022-23

Pedagogy:
Theory: 3 hrs / week

Total Number of Working Hours : 48 Hours

Sem/ Code	Paper Title	Week/ hour	Duration of Exami-nation	Exam Marks	IA C1+C2 Marks	Practical Exam	IA C1+C2 Marks	Total	Credits - 3		
									L	T	P
OE-4	Translation for Media	03	2½ hrs	60	20 +20	-	-	100	3	0	0

Course Objectives:

- To examine journalistic discourse.
- To focus on differences in language use in print media.
- follow current print media and practice translating media texts and build journalistic terminology

Learning Outcome:

- Students will be able to translate print media news items.
- Differentiate different text types in media such as news, articles, and advertisements.
- To compare the various discourses in different types of media texts.

Unit-I

Translation: Meaning, Definition, Nature, Scope and Significance; Principles and Techniques of Translation; Difference between literary translation and translation for media; Tools for translation **16 hrs.**

Unit-II

Process of Translation: Source language, Target Language, Co-ordination, Guidelines for Translation; Free, Paraphrasing, Summarized, Semantic and Word to Word Translation. Machine translators **16 hrs.**

Unit-III

Process of Translation: Source language, Target Language, Co-ordination, Guidelines for Translation; Free, Paraphrasing, Summarized, Semantic and Word to Word Translation. Machine translators **16 hrs.**

IA / Assignment Component:

1. Translate a Report from one Source Language to Destination Language.

Books for Reference:

1. Understanding Media: Marshall Mchuhan – Pub: Rantidge Classics.
2. Language the Basics: R. L. Tansk
3. Semiotics: The Basics: Divid Chandar – Pub: Foundation Books, New Delhi.
4. Aspects of Language and Translation: Steiner G – Pub: Oxford University Press
5. The Scandals of Translation: Lawrence Venuti
6. Media and Translation – Christina Schaeffineo – Pub: Cambridge Scholars Publishing
7. Good Writing for Journalist – Angela Phillips – Sage Publications.

Sri L. Ravi
Chairman- BoS
Journalism & Mass Communication
University of Mysore, Mysuru

Mahajana Education Society (R)
Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore, Re-Accredited by NAAC with 'A' Grade,
College with Potential for Excellence

Department of Journalism & Mass Communication

Board of Studies Meeting (NEP) held on 7th September 2022, Wednesday

MEMBERS PRESENT :

Sl.No.	Name	Designation	Signature
1	**Mr. L. Ravi** HoD & Assistant Professor SBRR Mahajana First Grade College (Autonomous) Jayalakshmipuram, Mysuru Email: raviiyermysore@gmail.com **Cell: +91 9380934470**	**Chirperson**	
2	**Dr. Sapna M.S** DOS in Commn. & Journalism Dept. Communication & Journalism Manasagangothri, Mysore splashsapna@gmail.com **Mobile : +91-821-2419510**	**Member**	
03	**Mr. Mahadevaswamy KN** HOD & Assistant Professor Dept. of Journalism Sahyadri Arts College Kuvempu University, BH Road, Shivamogga – 577303 knmswamy@gmail.com **Mobile : +91 9483796169**	**Member**	
4	**Dr. Shailesh Raj Urs G.B.** Assistant Professor Dept. of Journalism and Mass Communication, Karnataka State Open University, Mysore shaileshrajurs@gmail.com **Mobile : 9448672473**	**Member**	

5	**Mr. Keshava Murthy** Guest Lecturer Maharaja College, University of Mysore, Mysuru Keshavasnemrc@gmail.com, **Mobile : 9449271480**	**Member**	
6	**Dr. Mahendra C. K.** Editor-in-Chief 'Prathinidhi' Kannada Daily Kuvempunagar, Mysore- cvgudi@gmail.com **Mobile : 8884432032**	**Member**	
7	**Ms. Sindhu Nagaraj** Sub-Editor, 'The Hindu' No.859 & 860, Kasturi Buildings Anna Salai, Mount Road Chennai - 600002 Sindhu0411@gmail.com **Mobile : 9916595072**	**Member**	

MEMBERS ABSENT :

QUESTION PAPER
PATTERN

DSC THEORY:

Time: 3 hours **Marks: 60**

Instructions:
All PARTS are mandatory.

PART - A

Answer any FIVE of the following: 1. 5x2=10

1.
2.
3.
4.
5.
6.
7.

PART - B

Answer any FOUR of the following: 4x5=20

8.
9.
10.
11.
12.
13.

PART - C

Answer any THREE of the following: 3x10=30

14.
15.
16.
17.
18.

NOTE: Questions must be prepared such that all units are covered.

DSC PRACTICAL

Time: 3 hours **Marks: 25**

NOTE: 1. Questions for practical examination should be in the form of applied knowledge of the theory part. The question paper should be prepared by BoE for 25 marks. 2. A practical record should be evaluated by both internal and external examiner for the remaining 10+15 marks.

DEPARTMENT OF JOURNALIM AND MASS COMMUNICATION

Motto

Feed the watchdog, build the safe society

Vision

To inspire successive generations of talented Individuals to become dedicated Journalists

Mission

Provides students with the intellectual, interpretive and Practical skills they need to function as professionals. With state-of-the-art technology. We have created an environment for hands-on teaching and learning. Internships are vital to the educational experience and students may choose from a wide range of opportunities in print, television, radio and Internet media from around the region.

Program Outcomes (POs) for Bachelor of Arts

PO 1 **: Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain

PO 2 **:. Problem Analysis:** This program enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge

PO 3 **:. Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions

PO 4 **:. Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically

PO 5 **:. Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions

PO 6 **:. Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society

PO 7 **:. Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability

PO 8 **: Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence

PO 9 **: Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.

PO 10 **: Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11 **: Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management

PO 12 **: Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

List of BoS Members

Sl. No.	Category	Name & Designation Smt./Sri	Address for Communication	E-mail & Mobile No.
1	Chairperson	Swathy H J Assistant Professor & HoD	Department of Journalism And MassCommunication SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	swathy0704@gmail.com 9483394998
2	Member	Swarrna Assistant Professor	Department of Journalism And Mass Communication SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	swarnamahesh2468@gmail.com 9731093401
3	Two Experts from Other University	Dr.Mahadevaswamy K N HoD & Assistant Professor	Dept. of Journalism Sahyadri Arts College Kuvempu University, BH Road, Shivamogga – 577303	knmswamy@gmail.com 9483796169
4		Dr. Shailesh Raj Urs G.B. Assistant Professor	Department of Journalism and Mass Communication, Karnataka State Open University	shaileshrajurs@gmail.com 9448672473
5	Nominee by the Vice Chancellor	Dr. Sapna M.S Chairman & Professor	DoS in Journalism And Mass Communication Manasagangotri, University of Mysore, Mysuru – 570006	splashsapna@gmail.com 9845485234
6	Alumnus	Sindhu Nagaraj Sub-Editor, 'The Hindu'	No.859 & 860, Kasturi Buildings Anna Salai, Mount Road Chennai - 600002	sindhu0411@gmail.com 9916595072
7	Media Industry	Mahendra C. K Editor-in-Chief	Editor-in-Chief Prathinidhi' Kannada Daily News paper	cvgudi@gmail.com 9886076957

Course Structure (NEP 2020)

Discipline Specific Courses (DSC) and SEC

III Year

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		
Journalism And Mass Communication – V Semester									
DSC(5) 231558	Introduction To Communication	**4**	**0**	**4:0:2 (6credits)**	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(5)-Lab	Theory based Practical's on Introduction To Communication	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
DSC(6) 231559	Media Law And Ethics	**4**	**0**	**4:0:2 (6credits)**	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(6)-Lab	Theory based Practical's on Media Laws And Ethics	**0**	**4**		**10**	**15**	**25**	**3 Hours**	

Journalism And Mass Communication – VI Semester									
DSC(7) 231658	Fundamentals of Radio And Television	**4**	**0**	**4:0:2 (6credits)**	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(7)-Lab	Theory based Practical's on Fundamentals of Radio And Television	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
DSC(8) 231659	Advertising And Corporate Communication	**4**	**0**	**4:0:2 (6credits)**	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(8)-Lab	Theory based Practical's on Advertising And Corporate Communication	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
INT	**23INTJOU01**	**2**	**0**	**2:0:0**	**50**	**50**	**-**	**-**	**100**

DSC(5) Journalism And Mass Communication Syllabus for B.A

(Basic and Honors)

Semester: V

Course Code: 231558	**Course Title:** DSC(5) : Introduction To Communication DSC(5) : Lab :Theory based Practical's on Introduction To Communication
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 : Demonstrate knowledge and understanding of the communication and theories

CO2 : Demonstrate awareness of the diversity of approaches to understanding communication

CO3 : Culture in both historical and contemporary contexts and approaches.

CO4: Exposure to Technology oriented skills.

Course Content

Content	Hours
UNIT – 1	
Definition, Nature and Scope of Communication: Process of Communication, Barriers of Communication, Understanding Communication Through Models - Reviewing Aristotle's Model, Shannon-Weaver Model, Harold Lasswell Model, Wilbur Schramm Model and New Comb's Model, SMCR Model.	**15**
UNIT – 2	
Types of Communication: Verbal and Non-Verbal Communications, Difference Between Verbal and Non-Verbal Communication, Types of Non-Verbal Communication - Sign Language, Object Language, Body Language - Para Language, Touch, Space, Time and Silence as Non-Verbal Communication, Oral and Written Communication - Essentials of Good Writing, Techniques of Public Speaking.	**15**
UNIT – 3	
Levels and Limitations of Communication: Intra-Personal Communication, Inter-Personal Communication, Group Communication, Mass Communication and Mass-line Communication, The Mass Communication in National Development and Cultural Promotion.	**15**
UNIT – 4	
Introduction to Mass Media: Mass Media and Society, Types of Mass Media - Print, Electronic (Radio and Television), Folk, New Media, Media Convergence, Contemporary Issues in Mass Media - Fake News, Artificial Intelligence and Media.	**15**

Books for References:

1. Introduction to Mass Keval J Kumar Jaico 4th 1994 Communication .
2. Introduction to Mass Stanley J. Baran New York: 2nd 2002 Communication McGraw Hill.
3. Communication C.S. Rayadu Himalaya 9th 2010 Publishing House, Mumbai
4. Mass Communication Denis McQuail Sage Publication 6th 2010
5. Communication Denis McQuail & Singapore: 2nd 1981
6. An Introduction to Lynn H. & Turner Cambridge 1st 2019 Communication West University Press
7. The Dynamics of Joseph R. McGraw Hill, 12th 2013 Mass Communication Dominick

Weblinks:

1. https://home.snu.edu/~jsmith/library/body/v25.pdf
2. https://extension.illinois.edu/commit/quick-tips
3. https://unm5.unm.edu/5-research-COMMUNICATION-skills.html
4. https://pdfkeys.com/download/2537297-Basic%20Communication%20Skills%20Spc%202016%20Tripod%20Com.pdf
5. https://in.indeed.com/career-advice/career-development/english-communication-skills
6. https://dictionary.cambridge.org/example/english/basic-communication
7. https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e5b388a831&appId=PPGMS

Practical/Lab Work

1. Practicing formal and informal letter writing
2. Writing articles for newspapers
3 Resume writing
3. Writing Middles for editorial page
4. AI News Reading
5 Group Discussion And Paper Presentation

Course Articulation Matrix - 231558

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	2	2	3	2	1	2	2	3	1	2
CO 2	2	3	2	2	2	3	1	2	3	3	1	3
CO 3	2	2	1	2	2	3	2	1	3	3	2	2
CO 4	2	2	3	2	3	2	2	2	2	3	1	3
Weighted Average	**2.25**	**2.25**	**2.0**	**2.0**	**2.5**	**2.5**	**1.5**	**1.75**	**2.5**	**3.0**	**1.25**	**2.5**

DSC(6) Journalism And Mass Communication Syllabus for B.A

(Basic and Honors)

Semester V

Course Code: 231559	**Course Title:** DSC(6) : Media Laws And Ethics DSC(6) Lab : Theory based Practical's on Media Laws And Ethics
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Fundamentals of Media Laws and Ethics

CO 2: To maintain Journalistic standards and practices in a variety of newsgathering settings

CO 3: Ethical considerations Journalists face and how they make decisions in those areas.

CO 4: Aware about Professional Bodies

Course Content

Content	Hours
UNIT – 1	
Concept of Freedom of Speech: Press during Emergency of 1975, Press Freedom in Indian Constitution- Article 19 (1)(a), Article 19 (2), Hate Speech, World Press Freedom Index. Case Studies.	**15**
UNIT – 2	
Laws: Code of Ethics for Journalists, Defamation, Censorship, Sedition, Obscenity, Right to Privacy Law of Parliamentary Privileges 1971, Cyber Laws. Case Studies.	**15**
UNIT – 3	
Acts: Contempt of Court Act 1971, Right to Information Act 2005, The Official Secrets Act 1923, The Copyright Act 1957, Working Journalists Act 1955, Information Technology Act 2000, Case Studies.	**15**
UNIT – 4	
Professional Bodies and Committees: RNI, Press Commissions Press Council of India - Structure, Functions and Significance, Prasar Bharati, Chanda Committee, Varghese Committee, Paswan Committee, BRAI, TRAI, BCCC, ASCI, NBA.	**15**

Books for References:

1. Alia,V. (2004). Media Ethics and Social Change. New York: Routledge.

2. Sanders, K. (2003). Ethics and Journalism. New Delhi: Sage
3. Journalism Ethics: Moral Responsibility in the Media. Pearson Education
4. Meyers, C. (Ed.). (2010). Journalism Ethics: A philosophical approach. University

5 Pavlik,J. (2008). Media in the digital age. New York: Columbia

UniversityPress.

6. Plaisance, P.L. (2009). Media Ethics: Key principles for responsible practice, New
7. Price, M.E., Verhulst, S.G. and Morgan, L. (Ed.) (2013). Routledge handbook of
media law. New York: Routledge.
8. Rosenstiel,T. and Mitchell.A. (Eds.) (2003). thinking clearly: Cases in Journalistic Making. New York: Columbia University Press.

Weblinks:

1..https://www.dmlp.org/legal-guide/linking-copyrighted-materials

2.https://desikaanoon.in/media-law-and-ethics/

3..https://www.routledge.com/Media-Law-and-Ethics/Moore-Murray-Youm/p/book/9780367748562

4.https://www.igi-global.com/book/media-law-ethics-policy-digital/171726

5.https://www.bbc.co.uk/bitesize/guides/zyt282p/revision/2

Practical/Lab Work

1. File an RTI application and prepare a news report
2. Present a case study of Defamation on media
3. Present a case study of Hate Speech
4. Present a case study of Contempt of Court on media
5. Present a case study on violation of Parliamentary Privileges by media

Course Articulation Matrix - 231559

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	2	2	3	2	3	2	2	1	2
CO 2	2	2	2	2	2	3	2	3	1	2	1	3
CO 3	3	2	2	3	3	3	1	3	2	3	2	3
CO 4	2	2	3	2	3	3	1	3	3	2	1	3
Weighted Average	**2.5**	**2.0**	**2.0**	**2.25**	**2.5**	**3.0**	**1.5**	**3.0**	**2.0**	**2.25**	**1.25**	**2.75**

DSC(7) Journalism And Mass Communication Syllabus for B.A (Basic and Honors)

Semester: VI

Course Code: 231658	**Course Title:** DSC(7) : Fundamentals of Radio And Television DSC(7) Lab :Theory based Practical's on Fundamentals of Radio And Television
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Discuss the past and present status of Radio

CO2: Discuss the past and present status of Television

CO3: Enhancing skills behind audio and video production

CO4: Highlight the techniques of program production in Radio and Television

Course Content

Content	Hours
UNIT – 1	
Introduction to Radio: Nature and Characteristics of Radio, Evolution of Radio in India, Types of Radio Stations *(AM/FM),* Organizational Structure of AIR and Private Radio, Community Radio, Formats of Radio Programme, Present Status of Radio in India, Impact and Reach of Radio.	**15**
UNIT – 2	
Introduction to Television: Nature and Characteristics of Television, Growth of Television in India, Public and Private Television Channels, Regional Channels, Television Program Formats.	**15**
UNIT – 3	
Audio-Visual Media Presentation: Effective Communication Skills for Radio and Television, Presentation Techniques - Voice Modulation, Appearance, Facial Expression and Body Language.	**15**
UNIT – 4	
Script Writing for Radio and Television: Writing Skills for Broadcast and Telecast Media, Importance and Principles of Scripting, Various Elements of Script for Radio and Television, Script Formats, Style Sheet and Grammar.	**15**

Books for References:

1. Mastering Cliff Truesdell Wiley Publishing, pt 2017 Digital Audio Production Inc.
2. Audio Production Worktext: David Reese, Focal Press 1st 2009Concepts,Techniques, and Lynne Gross, Equipment Brian Gross
3. Television Production Zettl Wadsworth Pub Co 12th 2012 Handbook
4. F. M. Ste Writing for Television, Robert Hilliard Taxmann 11th New Media Publications Private Limited
5. Video Production Vasuki Oxford University 2nd 2013 Belavadi Press

Weblinks:

1.https://learn.org/directory/category/Media_Related_Communication/Communications_Technician/Television_and_Radio_Broadcasting.html
2.https://prasarbharati.gov.in/broadcasting-system/

3. https://www.flexiprep.com/NIOS-Notes/Senior-Secondary/Mass-Communication/NIOS-Class-12-Mass-Communication-Ch-13-Television-in-India.html
4. https://pib.gov.in/newsite/printrelease.aspx?relid=169932
5. https://www.migration.lt/radio-and-television

Practical/Lab Work

1. Prepare a Script for Radio Announcements
2. Prepare a Script for Radio Jingles
3. Prepare an Advertisement Script for Radio
4. Script writing and News Reading for Television (2 min)
5. Prepare Interview Script for Television

Course Articulation Matrix – 231658

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	2	2	3	3	1	1	2	3	2	1
CO 2	3	2	2	2	3	2	1	1	2	3	2	1
CO 3	2	2	2	2	3	2	1	2	3	3	2	3
CO 4	2	2	2	2	3	3	1	2	3	3	2	3
Weighted Average	**2.5**	**2.0**	**2.0**	**2.0**	**3.0**	**2.5**	**1.0**	**1.5**	**2.5**	**3.0**	**2.0**	**2.0**

DSC(8) Journalism And Mass Communication Syllabus for B.A

(Basic and Honors)

Semester: VI

Course Code: 231659	**Course Title:** DSC(8) : Advertising And Corporate Communications DSC(8) Lab : Theory based Practical's on Advertising And Corporate Communications
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Comphrend students to basic concept of advertising

CO2: Orient the students with the concept of copywriting as selling through writing

CO3: Train students to generate, develop and express ideas effectively in Corporate Sector

CO4: Orient the students about Tools of Corporate Communication

Course Content

Content	Hours
UNIT – 1	
Understanding Advertising: Definition, Nature and Scope of Advertising; Role and Functions of Advertising; Evolution of Advertisement in India and World, Current Trends; Advertising as a Tool of Communication; Role of Advertising in Society; Advertisement and Ethics.	**15**
UNIT – 2	
Types of Advertising: Types of Advertisements, Advertising Agency - Functions, Types and Structure; Advertising Copy writing for Print and Electronic Media- Headlines, Signature, Slogans and Logos.	**15**
UNIT – 3	
Introduction to Corporate Communication: Definition, Nature and Scope of Corporate Communication; Structure of Corporate Organization; Core Functions Corporate Communications ;Corporate Social Responsibility ;Comparison with Public Relations, Advertising, Publicity and Propaganda.	**15**
UNIT – 4	
Corporate Communication Tools: Print Media - House Journals, Newsletters, Brochures and Handouts lFlyers; Electronic Media Advertisements and Corporate Films; Digital Media - Social Media, Blogs, Vlogs.	**15**

Books for References:

1. Kleppner, Otto; Fundamentals of Advertising; Prentice Hall; New Jersey. 1980
2. Gupta, Sen; Brand Positioning; Tata McGraw Hill; New Delhi; 1990.
3. Advertising as Communication - Dyer Gillian.
4. Foundations of the Theory and Practice of Advertising - S.A. Chunawalla and F.C. Scythia
5. Cornelissen, Joep; Corporate Communication: A Guide to Theory and Practice; Sage. 2011

Weblinks

1. **https://www.tutorialspoint.com/advertisement_and_marketing_communications/corporate_communications.htm**
2. **https://www.shiksha.com/mba/articles/pr-vs-advertising-vs-corporate-communication-courses-colleges-career-jobs-blogId-116385**
3. **https://www.geeksforgeeks.org/difference-between-corporate-communication-and-marketing-communication/**
4. **https://aaftonline.com/advertising-pr-branding**
5. **https://zenmedia.com/blog/communications-vs-pr-vs-marketing/**

Practical/Lab Work

1. Display Advertisement (Product and Service)
2. Classified Advertisements
3. Product Announcement
4. Preparing Brochures
5. Posters & Flyers
6. Photoshop

Course Articulation Matrix – 231659

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	3	3	3	2	1	3	3	3	3	1
CO 2	3	2	3	3	3	2	1	2	3	3	3	1
CO 3	3	2	3	2	3	3	1	2	3	3	3	1
CO 4	2	1	3	2	3	3	2	2	3	3	3	1
Weighted Average	**2.75**	**1.75**	**3.0**	**2.5**	**3.0**	**2.5**	**1.25**	**2.25**	**3.0**	**3.0**	**3.0**	**1.0**

SEC : Journalism And Mass Communication Syllabus for B.A

(Basic and Honors)

Semester VI

Course Code:23INTJOU01	**Course Title:** Internship
Course Credits: 02	**Hours per Week: 02**
Total Contact Hours: 90 Hours	**Formative Assessment Marks:** 100 Marks C1=50 C2=50

Note: This course will run as per the guidelines defined by the BoS, Journalism And Mass Communication ,University of Mysore, Mysuru and the same is approved by BoS, Journalism And Mass Communication, SBRR Mahajana First Grade College, Mysuru.

Course Outcomes (COs):

CO 1: Functioning of media houses and produces the desired media content.

CO 2: Relate with the need of media houses.

Course Articulation Matrix -23INTJOU01

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	1	1	1	2	2	1	3	3	3	1	2
CO 2	2	2	1	3	2	3	2	2	3	3	2	2
Weighted Average	**2.5**	**1.5**	**1**	**2**	**2**	**2.5**	**1.5**	**2.5**	**3**	**3**	**1.5**	**2**

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively for the semester. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

The student is evaluated for 100marks in C1 and C2 as per the following scheme:

Project Progress Presentation (**C1**): 50 marks

Project Development and Report (**C2**): 50 marks

Assessment Criteria	Marks
Project Presentation Skills	50
Project Development Skills and Report	50
Total	**100**

Continuous Formative Evaluation/Internal Assessment (DSC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance(the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment marks

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of manual work, programme and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

• The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

C1 Component: 10 Marks : This will be based on a practical test. This should be completed by the 8th week of the semester.

C2 Component : 15 Marks : This will be based on practical test / assignment for 10 marks and 5 marks for practical record. This should be completed by the 16th week of the semester.

• The student is evaluated for 25 marks in **C3** as per the following scheme:

Assessment Criteria	Marks
Practical Record	15
Viva	10
Total	**25**

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of manual work, programme and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

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Viva	10
Total	**25**

DSC- Theory Question Paper Pattern -V and VI Semester

Max. Marks: 60 Marks **Exam Duration:** 2½ Hours

Instructions: Paper Setting

- The Question Paper is divided into 3 parts: Part - A , Part – B and Part -C
- **Part – A** : Should consist of 1**0 Questions**.
  10 Questions to be answered.
- **Part – B** : Should consist of **4 Main** Questions (1 from Each Unit).
  6 Sub Question will be given, out of which **4 Questions** to be answer
- **Part – C** Should consist of **4Main** Questions (1 from Each Unit).
  3 Sub Question will be given, out of which **3 Questions** to be answer

Part A

Answer all questions. Each Question carries 1 Marks. 1×10 =10

I .

1.

a.
b.
c
d
e
f
g
h
i
j

Part B

Answer any Four questions. Each Question carries 5 Marks. 4×5=20

II.

2.
3.
4
5
6
7

Part C

Answer any three questions. Each Question carries 10 Marks. 3×10 =30

III.

8.
9.
10.
11
12

Mahajana Education Society (R)
Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore, Re-Accredited by NAAC with 'A' Grade,
College with Potential for Excellence

Department of Journalism & Mass Communication

Board of Studies Meeting (NEP) held on 26th September 2023,Tuesday

Sl.No.	Name	Designation	Signature
1	**Swathy H J** HoD & Assistant Professor Dept. of Journalism and Mass Communication SBRR Mahajana First Grade College (Autonomous) Jayalakshmipuram, Mysuru Email: swathy0704@gmail.com **Mobile: 9483394998**	**Chairperson**	
2	**Swarna** Assistant Professor Dept. of Journalism and Mass Communication SBRR Mahajana First Grade College (Autonomous) Jayalakshmipuram, Mysuru **Email:** swarnamahesh2468@gmail.com **Mobile: 9731093401**	**Member**	
3	**Dr. Sapna M.S** **Chairman & Professor** Dept. of Journalism and Mass Communication Manasagangothri, Mysore **Email:** splashsapna@gmail.com **Mobile: 9845485234**	**University Nominee**	
4	**Mr. Mahadevaswamy KN** HOD & Assistant Professor Dept. of Journalism Sahyadri Arts College Kuvempu University, BH Road, Shivamogga – 577303 **Email:** knmswamy@gmail.com **Mobile : +91 9483796169**	**Member (Other University)**	

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5	**Dr. Shailesh Raj Urs G.B.** Assistant Professor Dept. of Journalism and Mass Communication, Karnataka State Open University, Mysore **Email:** shaileshrajurs@gmail.com **Mobile : 9448672473**	**Member (Other University)**	
6	**Dr. Mahendra C. K** Editor-in-Chief Prathinidhi' Kannada Daily News paper, Kuvempunagar, Mysore **Email: cvgudi@gmail.com** **Mobile: 9886076957**	**Member (Media Industry)**	
7	**Ms. Sindhu Nagaraj** Sub-Editor, 'The Hindu' No.859 & 860, Kasturi Buildings Anna Salai, Mount Road Chennai - 600002 **Email:** Sindhu0411@gmail.com **Mobile: 9916595072**	**Member (Alumnai)**	AB

Chairperson
BOS/BOE in
Journalism & Mass Communication
SBRR Mahajana First Grade College
(Autonomous)

SBRR Mahajana First Grade College, Jayalakshmipuram,

DEPARTMENT OF KANNADA

MOTTO

Refine Cultural Values in Students

VISION

Imbibe Values for Promotion of Kannada Language and Literature

MISSION

Awareness of Richness of Kannada Language and Literature through the Age.

Involve Students Actively in Literary and Cultural activities to Orient them towards Society.

Program Outcome (PO) Attributes

PO 1: Domain Knowledge

PO 2: Problem Analysis

PO 3: Design and Development of Solutions

PO 4: Investigation

PO 5: Use of Modern Techniques/Tools

PO 6: Impact on Society

PO 7: Environment and Sustainability

PO 8: Moral and Ethical Values

PO 9: Individual and Team Work

PO 10: Communication

PO 11: Project Management and Finance

PO 12: Life-long Learning

List of BoS Members

Sl. No.	Category	Name and Designation	Address for Communication	E-mail and Mobile No.
1.	Chairperson	Dr. H R Thimmegowda Associated Professor	SBRR Mahajana First Grade College (Autonomous) Mysuru	thimmegowdahr.fgc@mahajana.edu.in **9972798708**
2.	Member	Dr. Vinodamma Assistant Professor	SBRR Mahajana First Grade College (Autonomous) Mysuru	vinodamma123@gmail.com **9964581858**
3.	Nominee by the Vice Chancellor	Dr. Lolakshi N K Professor	Kuvempu Kannada AdhyayanaSamstheMysore University, Mysore	nklolakshi@gmail.com 9480157279
4.	Two experts from other University/ Colleges	Dr. Lingarajaiah Assistant Professor	Vivekananda First Grade College, Rajajinagara, Bengaluru	drblingaraj@gmail.com **9008779997**
		Prof. Honnaganahalli Kariyanna Professor	University Arts College Tumkuru-572103	kariyannatumkuruniversity@gmail.com **6362854252**
5.	Alumnus	Sri Rajeeva K J Assistant Professor	Government Women First Grade College Vijayanagara, Mysuru	hellorajeeva@gmail.com **9481187919**

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ ವಿನ್ಯಾಸದ ಆಶಯಗಳು

ಹೊಸ ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿಯ ಆಶಯಗಳಿಗೆ ಅನುಗುಣವಾಗಿ ಕನ್ನಡ ಭಾಷಾ, ಮುಕ್ತ ಆಯ್ಕೆ ಕನ್ನಡ ಪಠ್ಯ ಕ್ರಮಗಳ ವಿನ್ಯಾಸವನ್ನು ರೂಪಿಸಲಾಗಿದೆ. ಕರ್ನಾಟಕದಾದ್ಯಂತ ವಿವಿಧ ವಿಶ್ವವಿದ್ಯಾಲಯಗಳು ಈತನಕ ಅರ್ಥಪೂರ್ಣವಾದ ಹಾಗೂ ವೈವಿಧ್ಯಮಯ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಅನುಸರಿಸುತ್ತಾ ಬಂದಿವೆ. ಸಾಹಿತ್ಯದ ಮೂಲಗುಣವಾದ ನಿತ್ಯನೂತನತೆಗೆ ಅನುಗುಣವಾಗಿ ಹೊಸತನವನ್ನು ತರಲು ಪ್ರಯತ್ನಿಸಲಾಗಿದೆ. ಈಗ ಹೊಸ ಪಠ್ಯಕ್ರಮದ ಪ್ರಕಾರ ಪ್ರಯೋಗಿಸಲ್ಪಟ್ಟು ಯಶಸ್ವಿಯಾಗಿರುವ ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯವು **"ವಿಷಯಾಧಾರಿತ ಪಠ್ಯಕ್ರಮ"** (Theme Based)ವನ್ನು ಅಳವಡಿಸಲು ಉದ್ಯುಕ್ತವಾಗಿದೆ. ಈ ಮೂಲಕ ಕಲಿಕೆ ಮತ್ತು ಫಲಿತಗಳ ನಡುವಿನ ಸಮತೋಲನವನ್ನು ಸಾಧಿಸುವುದು ಸಾಧ್ಯವಾಗುತ್ತದೆ. ಶಿಕ್ಷಣವು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಭಾಷಾ ಕೌಶಲ್ಯ, ಸಾಹಿತ್ಯದ ಮಾನವೀಯ ಸಂವೇದನೆ, ಸಮಕಾಲೀನ ವಿದ್ಯಾಮಾನಗಳ ಅರಿವು, ಸಂಸ್ಕೃತಿಯ ಬೆಳಕು ಮತ್ತು ರಾಷ್ಟ್ರೀಯತೆಯ ಮನೋಭಾವವನ್ನು ಕಟ್ಟಿಕೊಡುವುದರಲ್ಲಿ ಯಶಸ್ವಿಯಾಗಬೇಕು ಎನ್ನುವ ಹೊಸ ಶಿಕ್ಷಣ ನೀತಿಯ ಆಶಯವನ್ನು ವಿಷಯಾಧಾರಿತ ಪಠ್ಯಕ್ರಮದ ಮೂಲಕ ಸಾಧಿಸಿಕೊಳ್ಳುವುದು ಸಾಧ್ಯವಾಗುತ್ತದೆ. ಉದಾಹರಣೆಗೆ 'ನಾಡು–ನುಡಿ–ಚಿಂತನೆ'. 'ಸಾಮರಸ್ಯ', 'ಪರಿಸರ ಜಾಗತೀಕರಣ' ಮೊದಲಾದವು ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಉದ್ದೇಶಿತ ಫಲಿತಗಳನ್ನು ನೀಡುತ್ತವೆ. ಹಾಗೆಯೇ ಆಯಾ ಅಧ್ಯಯನ ಶಿಸ್ತುಗಳ ಸ್ವರೂಪಕ್ಕನುಗುಣವಾಗಿ ಒಂದು ಘಟಕವನ್ನು ಸ್ನಾತಕ ಅಧ್ಯಯನ ಮಂಡಳಿಯಲ್ಲಿ ಪರಿಶೀಲಿಸಿ ರೂಪಿಸಿ ಸಿದ್ಧಪಡಿಸಲಾಗಿದೆ.

ಭಾಷಾ ಪಠ್ಯಗಳನ್ನು ನಾಲ್ಕು ಸೆಮಿಸ್ಟರ್‌ಗಳಲ್ಲಿ ಪ್ರಥಮ ಭಾಷೆಯಾಗಿ ಬೋಧಿಸತಕ್ಕದ್ದು, ಪ್ರತಿ ಸೆಮಿಸ್ಟರ್‌ಗೂ 3 ಕ್ರೆಡಿಟ್‌ಗಳು ಹಾಗೂ ನಾಲ್ಕು ಗಂಟೆ ಬೋಧನಾ ಅವಧಿ ಇರುತ್ತದೆ. ಮುಕ್ತ ಆಯ್ಕೆ ಕನ್ನಡ ಪತ್ರಿಕೆಗಳನ್ನು ಎಲ್ಲ ಅಧ್ಯಯನ ಶಿಸ್ತುಗಳ ವಿದ್ಯಾರ್ಥಿಗಳೂ ನಾಲ್ಕು ಸೆಮಿಸ್ಟರ್‌ಗಳಿಗೂ ಆಯ್ಕೆ ಮಾಡಿಕೊಳ್ಳಲು ಅವಕಾಶವಿದೆ.

ಪದವಿ ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಗಳು

1) ಕಲಾಗಂಗೋತ್ರಿ (ಬಿ.ಎ. 1 ಮತ್ತು 2ನೇ ಸೆಮ್ ಕನ್ನಡ ಪಠ್ಯ)
2) ವಿಜ್ಞಾನಗಂಗೋತ್ರಿ (ಬಿಎಸ್ಸಿ 1 ಮತ್ತು 2ನೇ ಸೆಮ್ ಕನ್ನಡ ಪಠ್ಯ)
3) ಗಣಕಗಂಗೋತ್ರಿ (ಬಿಸಿಎ 1 ಮತ್ತು 2ನೇ ಸೆಮ್ ಕನ್ನಡ ಪಠ್ಯ)
4) ವಾಣಿಜ್ಯಗಂಗೋತ್ರಿ (ಬಿಕಾಂ 1 ಮತ್ತು 2ನೇ ಸೆಮ್ ಕನ್ನಡ ಪಠ್ಯ)
5) ವ್ಯವಹಾರ ನಿರ್ವಹಣಗಂಗೋತ್ರಿ (ಬಿಬಿಎ 1 ಮತ್ತು 2ನೇ ಸೆಮ್ ಕನ್ನಡ ಪಠ್ಯ)

COURSE STRUCTURE (NEP)

ಎ.ಇ.ಸಿ.ಸಿ. (A.E.C.C – Ability Enhancement Compulsory Course)

I Year

Course Type, Code and Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	L: T:P	C1	C2	C3		
Kannada – I Sem									
AECC(1)	ಕನ್ನಡ ಭಾಷೆ ಪತ್ರಿಕೆ–1 **BA:** 22KAN101 **BSc:** 22KAN102 **BCom:** 22KAN103 **BBA (All):** 22KAN104 **BCA:** 22KAN105	2	2	2:1:0 (3 Credits)	20	20	60	$2\frac{1}{2}$ Hour	100
OE(1)	ಕನ್ನಡವ್ಯಾಕರಣ **22OEKAN101**	3	-	3:0:0 (3 Credits)	20	20	60	$2\frac{1}{2}$ Hour	100
Kannada – II Sem									
AECC(2)	ಕನ್ನಡ ಭಾಷೆ ಪತ್ರಿಕೆ–2 **BA:** 22KAN201 **BSc:** 22KAN202 **BCom:** 22KAN203 **BBA (All):** 22KAN204 **BCA:** 22KAN205	2	2	2:1:0 (3 Credits)	20	20	60	$2\frac{1}{2}$ Hour	100
OE(2)	ಆಡಳಿತಾತ್ಮಕ ಕನ್ನಡ **22OEKAN201**	3	-	3:0:0 (3 Credits)	20	20	60	$2\frac{1}{2}$ Hour	100

ಅನುಬಂಧ

ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿ–2020

ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯ ಸ್ವರೂಪ

ಪ್ರೋಗ್ರಾಂವಾರು ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಕ್ರಮ :

ಶೈಕ್ಷಣಿಕ ವ್ಯವಸ್ಥೆಯಲ್ಲಿ ಭಾಷಾ ಪಠ್ಯಗಳು ಮತ್ತು ಭಾಷಾ ಅಧ್ಯಾಪಕರ ಜವಾಬ್ದಾರಿ ಎಲ್ಲರಿಗೂ ಗೊತ್ತಿರುವುದೇ ಆಗಿದೆ. ಹಲವು ಬಗೆಯ ಬಿಕ್ಕಟ್ಟುಗಳು ಮತ್ತು ವಿಷಮತೆಗಳು ಹೆಚ್ಚುತ್ತಿರುವ ಈ ಕಾಲಘಟ್ಟದಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳನ್ನು ಪ್ರಜ್ಞಾವಂತರನ್ನಾಗಿ, ಸಂವೇದನಾಶೀಲರನ್ನಾಗಿ ಮಾಡುವ ಅವಕಾಶ ಭಾಷಾ ಪಠ್ಯಗಳಲ್ಲಿ ಇರುತ್ತದೆ. ಆ ಅವಕಾಶವನ್ನು ಎಂದಿನಿಂದಲೂ ಭಾಷಾ ಪಠ್ಯ ಮಂಡಳಿಗಳು ಆಸ್ಥೆಯಿಂದ ನಿಭಾಯಿಸುತ್ತಲೇ ಬಂದಿವೆ.

ಹೊಸ ಶಿಕ್ಷಣ ನೀತಿಯ ಅನುಷ್ಠಾನದ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ರಚಿಸಲಾದ ಸಮಿತಿಯು ಇದನ್ನೇ ಬುನಾದಿಯಾಗಿಸಿಕೊಂಡು ಪಠ್ಯಕ್ರಮವನ್ನು ಕುರಿತ ನಕಾಶೆಯನ್ನು ರಚಿಸಿದೆ. ಕನ್ನಡವನ್ನು 'ಜ್ಞಾನದ ಭಾಷೆ'ಯಾಗಿ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ನೀಡಬೇಕೆನ್ನುವುದು ಸಮಿತಿಯ ಆಶಯ. ಹೊಸ ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿಯು ಈ ಅಂಶವನ್ನೇ ಉದ್ಯೋಗ ಮತ್ತು ಕೌಶಲ್ಯಗಳು ಶಿಕ್ಷಣದ ಮುಖ್ಯ ಗುರಿ ಎಂದು ಹೇಳಿದೆ. ಹೀಗಾಗಿ ತಾಯಿ ಭಾಷೆ ಕನ್ನಡದ ಮೂಲಕ ವಿದ್ಯಾರ್ಥಿಗಳು ಸ್ಥಳೀಯ, ರಾಷ್ಟ್ರೀಯ ಮತ್ತು ಜಾಗತೀಯ ಸವಾಲುಗಳನ್ನು ಸನ್ನದ್ಧರಾಗುವ ಬಗೆಯಲ್ಲಿ ಪಠ್ಯಕ್ರಮದ ವಿನ್ಯಾಸವನ್ನು ರೂಪಿಸಲಾಗಿದೆ. ಜಾಗತೀಕರಣವೂ ಸೇರಿದಂತೆ ಹಲವು ವಿದ್ಯಮಾನಗಳು ನಮ್ಮ ಸಾಮಾಜಿಕ ಮತ್ತು ಸಾಂಸ್ಕೃತಿಕ ಸನ್ನಿವೇಶಗಳನ್ನು ಸಮೀಕರಣಗಳನ್ನು, ಗ್ರಹಿಕೆಗಳನ್ನು ಆಳವಾಗಿ ಪ್ರಭಾವಿಸುತ್ತಿವೆ. ಇವು ನಮ್ಮ ಯುವ ತಲೆಮಾರುಗಳನ್ನು ತಮ್ಮ ಬೇರುಗಳಿಂದಲೇ ದೂರ ಮಾಡುತ್ತಾ ಅವರನ್ನು ಪರಕೀಯರನ್ನಾಗಿಸುತ್ತಿದೆ ಎನ್ನುವ ಆತಂಕ ಅಧ್ಯಾಪಕರನ್ನು ಕಾಡುತ್ತಿದೆ. ಈ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ನಾಡು–ನುಡಿ, ಜಲ, ಭೂಮಿ, ಸಮಕಾಲೀನ ಸವಾಲುಗಳನ್ನು ಕನ್ನಡದ ಅತ್ಯುತ್ತಮ ಪಠ್ಯಗಳ ಮುಖಾಂತರ ಕಲಿಸಬಹುದೆನ್ನುವ ನಂಬಿಕೆ ಈ ಸಮಿತಿಯದ್ದು. ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಹಿತ್ಯಕ ಅಭಿರುಚಿಯನ್ನು ಹೆಚ್ಚಿಸಬೇಕು, ಭಾಷೆ ಮತ್ತು ಸಾಹಿತ್ಯಗಳನ್ನು ಕುರಿತ ಪ್ರೀತಿಯನ್ನು ಹೆಚ್ಚಿಸಬೇಕು ಎನ್ನುವುದು ಪಠ್ಯಗಳ ಒಂದು ಆಯಾಮವಾದರೆ, ಮತ್ತೊಂದು ಆಯಾಮವು ನಮ್ಮ ಸಮೃದ್ಧ ಸಾಂಸ್ಕೃತಿಕ, ಸಾಹಿತ್ಯಕ ಪರಂಪರೆಯ ಅರಿವೂ ಅವರಲ್ಲಿ ಮೂಡಬೇಕೆನ್ನುವುದು. ಎರಡು ವರ್ಷಗಳ ಪಠ್ಯಗಳ್ಲಲಿ ಅವರಲ್ಲಿ ನಾಗರಿಕ ವ್ಯಕ್ತಿತ್ವದ ಧಾತುಗಳನ್ನು ತುಂಬಬೇಕು. ಸಾಹಿತ್ಯದ ಅಂತಃಕರಣ ಮತ್ತು ಸಾಮಾಜಿಕ ವ್ಯಕ್ತಿತ್ವದ ಬೌದ್ಧಿಕ ಅರಿವು ಅವರಲ್ಲಿ ಸಮನಾಗಿ ಬೆಳೆಯುತ್ತಾ ಹೋಗಬೇಕು. ಇವುಗಳಲ್ಲದೆ ಕನ್ನಡವು ಅವರ ವೃತ್ತಿಯ ದಾರಿಯೂ ಆಗಬೇಕು. ಹಲವು ವೃತ್ತಿಗಳನ್ನು ಅವರು ಅರಿಸಿಕೊಳ್ಳಲು ಅನುವಾಗುವ ಪಠ್ಯಕ್ರಮವೂ ಸೇರಬೇಕು. ಈ ಎಲ್ಲ ಅಂಶಗಳನ್ನು ಗಮನದಲ್ಲಿಟ್ಟುಕೊಂಡು ಸಮಿತಿಯು 'ವಿಷಯಾಧಾರಿತ ಪಠ್ಯ'ವನ್ನು ರೂಪಿಸಿದೆ.

ಬಿ.ಎ.

ಸೆಮಿಸ್ಟರ್–1

Course Code: 22KAN101	**Course Title:** ಕನ್ನಡಭಾಷೆ – 1
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: ಕನ್ನಡಭಾಷೆ ಮತ್ತು ಸಾಹಿತ್ಯದ ಶ್ರೀಮಂತಿಕೆಯನ್ನು ಅರಿತು ಕನ್ನಡ ನಾಡು–ನುಡಿಯ ರಕ್ಷಣೆಗೆ ಸದಾ ಸಿದ್ಧರಾಗಿರುತ್ತಾರೆ.

CO 2: ಬಾಲ್ಯದ ಅನುಭವಗಳನ್ನು ಮೆಲುಕುಹಾಕುವುದರೊಂದಿಗೆ ಸದೃಢ ಬೌದ್ಧಿಕ ಮತ್ತು ಮಾನವೀಯ ವ್ಯಕ್ತಿತ್ವ ನಿರ್ಮಿಸಿಕೊಳ್ಳುವರು.

CO 3: ಮಾನವ ಮತ್ತು ಪ್ರಕೃತಿ ನಡುವಿನ ಅವಿನಾಭಾವ ಸಂಬಂಧವನ್ನು ಅರಿತು, ಪ್ರಕೃತಿ ಸಂರಕ್ಷಣೆಯಲ್ಲಿ ಭಾಗಿಯಾಗುತ್ತಾರೆ.

CO 4: ಲಿಂಗಸಮಾನತೆ ಮನೋಭಾವವನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುತ್ತಾರೆ.

ಘಟಕ–1 ಕನ್ನಡ ನಾಡು – ನುಡಿ ಚಿಂತನೆ **14 ಗಂಟೆಗಳು**

1. ಕನ್ನಡಮೆನಿಪ್ಪಾ ನಾಡು ಚೆಲ್ವಾಯ್ತು (ವಿವಿಧ ಕಾವ್ಯಗಳಿಂದ ಆಯ್ದ ಪದ್ಯಗಳು)
2. ಹೊಯಿಸಳನ ದಳಪತಿ – ಮಾಸ್ತಿ ವೆಂಕಟೇಶ ಅಯ್ಯಂಗಾರ್
3. ತನ್ನನ್ನು ತಿಳಿದುಕೊಳ್ಳಬೇಕಾದ ಕರ್ನಾಟಕ – ಪಾಟೀಲ ಪುಟ್ಟಪ್ಪ

ಘಟಕ–2 ಬಾಲ್ಯ **14 ಗಂಟೆಗಳು**

1. ಋತುಸಂಹಾರ – ಡಾ. ಬಂಜಗೆರೆ ಜಯಪ್ರಕಾಶ
2. ಪಿಗ್ಮಿ ಏಜೆಂಟ್ ಮತ್ತು ಗಾಂಧಿ ಜೋಗತಿ – ಮಂಜಮ್ಮ ಜೋಗತಿ
   (ನಿರೂಪಣೆ : ಅರುಣ್ ಜೋಳದ ಕೂಡ್ಲಿಗಿ)
3. ಕೇಳದ ಕಾಣದ ಸಂಗತಿಗಳು – ಸಿದ್ದಲಿಂಗಯ್ಯ

ಘಟಕ–3 ಪ್ರಕೃತಿ **14 ಗಂಟೆಗಳು**

1. ಮಲ್ಲಿಗೆ – ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
2. ಯದುಗಿರಿಯ ಮೌನ ವಿಕಾಸ – ಪು.ತಿ.ನ
3. ನೌರು ದ್ವೀಪದ ದುರಂತ – ಕೆ.ಪಿ.ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ

ಘಟಕ–4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಗಾರ್ಮೆಂಟ್ ಹುಡುಗಿ ಹೊಲಿದ ಚೆಂದದ ಪೋಷಾಕು – ಡಾ. ಸಬಿತಾ ಬನ್ನಾಡಿ
2. ನವಿಲುಗಳು – ಯು.ಆರ್.ಅನಂತಮೂರ್ತಿ
3. ಒಮ್ಮೆ ಹೆಣ್ಣಾಗು ಪ್ರಭುವೇ – ಬಾನು ಮುಷ್ತಾಕ್

ಪಠ್ಯಪುಸ್ತಕ : ಕಲಾಗಂಗೋತ್ರಿ – 1

Course Articulation Matrix – 22KAN101

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	2	3	2	3	3	3	2	2
CO 2	3	3	3	2	-	3	-	3	2	3	2	2
CO 3	3	3	3	2	3	3	3	2	2	2	2	2
CO 4	3	3	3	2	2	2	1	3	2	2	1	2
Weighted Average	**3**	**3**	**3**	**2.25**	**2.33**	**2.75**	**2**	**2.75**	**2.25**	**2.5**	**1.75**	**2**

ಬಿ.ಎ.

ಸೆಮಿಸ್ಟರ್–2

Course Code: 22KAN201	**Course Title:** ಕನ್ನಡಭಾಷೆ – 2
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1. ತಮ್ಮ ಬದುಕಿನಲ್ಲಿ ದೇಶಿಯತೆಗೆ ಪ್ರಾಧ್ಯಾನತೆಯನ್ನು ನೀಡುತ್ತಾರೆ.

CO 2. ಜವಾಬ್ದಾರಿಯುತ ನಾಗರೀಕರಾಗುತ್ತಾರೆ.

CO 3. ಬದುಕಿನಲ್ಲಿ ಪ್ರೀತಿಸುವ ಗುಣವನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುವರು

CO 4. ಸಾಮಾಜಿಕ ಸಾಮರಸ್ಯವನ್ನು ಕಲಿತು, ಪರಂಪರೆಯ ಪೋಷಕರಾಗುತ್ತಾರೆ.

ಘಟಕ–1 ಜಾಗತೀಕರಣ **14 ಗಂಟೆಗಳು**

1. ಕುಂಟೋಬಿಲ್ಲೆ – ಎ.ಕೆ.ರಾಮಾನುಜನ್
2. ಬಿಡುಗಡೆ – ಚಂದ್ರಕಾಂತ ವಡ್ಡು
3. ಶಹರದ ಕೊಂಬೆಗಳಲ್ಲಿ ಹಳದಿ ಎಲೆಗಳು – ಜಯಂತ ಕಾಯ್ಕಿಣಿ

ಘಟಕ–2 ಸಮಾಜ **14 ಗಂಟೆಗಳು**

1. ರೊಟ್ಟಿ ಮತ್ತು ಕೋವಿ – ಸು.ರಂ.ಎಕ್ಕುಂಡಿ
2. ಬಚ್ಚೀಸು – ದು.ಸರಸ್ವತಿ
3. ನಾನ್ಯಾರಿಗಲ್ಲದವಳು – ಜಿ.ವಿ.ಆನಂದಮೂರ್ತಿ

ಘಟಕ–3 ಪ್ರೀತಿ **14 ಗಂಟೆಗಳು**

1. ಬಾರೆ, ನನ್ನ ಶಾರದೆ – ಕೆ.ಎಸ್.ನರಸಿಂಹಸ್ವಾಮಿ
2. ಅವ್ವ – ಬೆಸಗರಹಳ್ಳಿ ರಾಮಣ್ಣ
3. ವೆಂಕಟಿಗನ ಹೆಂಡತಿ – ಮಾಸ್ತಿ

ಘಟಕ–4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಭಿನ್ನ ಭೇದವ ಮಾಡಬ್ಯಾಡಿರೊ – ಅಜ್ಞಾತ ತತ್ವಪದಕಾರ
2. ಪರಂಪರೆ – ಡಾ.ವಿಜಯಾ ದಬ್ಬೆ
3. ಸಂಬಳಕ್ಕೆ ಸಿಕ್ಕಿಕೊಂಡ ದೆವ್ವ – ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ

ಪಠ್ಯಪುಸ್ತಕ : ಕಲಾಗಂಗೋತ್ರಿ – 2

Course Articulation Matrix – 22KAN201

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	2	1	3	2	3	2	2	2	2
CO 2	3	3	3	2	2	3	3	3	2	2	2	2
CO 3	3	3	2	2	1	3	3	3	2	2	2	2
CO 4	3	3	3	2	2	3	1	3	3	3	3	2
Weighted Average	**3**	**3**	**2.5**	**2**	**1.5**	**3**	**2.25**	**3**	**2.25**	**2.25**	**2.25**	**2**

ಬಿ.ಎಸ್ಸಿ

ಸೆಮಿಸ್ಟರ್–1

Course Code: 22KAN102	**Course Title:** ಕನ್ನಡಭಾಷೆ – 1
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1.ಕನ್ನಡಭಾಷೆ ಮತ್ತು ಸಾಹಿತ್ಯದ ಶ್ರೀಮಂತಿಕೆಯನ್ನು ಅರಿತು ಕನ್ನಡ ನಾಡು–ನುಡಿಯ ಬಗ್ಗೆ ಅಭಿಮಾನ ಹೊಂದುವರು.

CO 2.ಭೂಮಿಯ ಮಹತ್ವ ತಿಳಿದು, ಭೂಮಿಯ ಸಂರಕ್ಷಣೆಯಲ್ಲಿ ತೊಡಗುತ್ತಾರೆ.

CO 3.ಜೀವನದಲ್ಲಿ ಮೌಢ್ಯತೆಯನ್ನು ಕಳೆದುಕೊಂಡು, ವೈಚಾರಿಕ ಬದುಕಿಗೆ ಆದ್ಯತೆ ನೀಡುತ್ತಾರೆ.

CO 4.ಮಾನವೀಯ ಮೌಲ್ಯಗಳನ್ನು ಮೈಗೂಡಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

ಘಟಕ : 1 ಕನ್ನಡ ನಾಡು ನುಡಿ ಚಿಂತನೆ **14 ಗಂಟೆಗಳು**

1. ಕನ್ನಡ ಪದಗೊಳ್ – ಜಿ.ಪಿ. ರಾಜರತ್ನಂ
2. ಬೆಂಕಿ ಬಿದ್ದಿದೆ ಮನೆಗೆ – ಕಯ್ಯಾರ ಕಿಞ್ಞಣ್ಣ ರೈ
3. ಹೊಯಿಸಳನ ದಳಪತಿ – ಮಾಸ್ತಿ ವೆಂಕಟೇಶ ಅಯ್ಯಂಗಾರ್

ಘಟಕ : 2 ಭೂಮಿ **14 ಗಂಟೆಗಳು**

1. ಹೊನ್ನ ಬಿತ್ತೇವು ಹೊಲಕ್ಕೆಲ್ಲ – ಜನಪದ
2. ಚಿಗರಿಗಂಗಳ ಚೆಲುವಿ – ದ.ರಾ. ಬೇಂದ್ರೆ
3. ಬುಲ್ಡೋಜರ್ ಸಂಸ್ಕೃತಿ – ನಾಗೇಶ್ ಹೆಗಡೆ

ಘಟಕ : 3 ವೈಜ್ಞಾನಿಕ ಮನೋಧರ್ಮ **14 ಗಂಟೆಗಳು**

1. ಒಂದೇ ಒಂದು ಬಾರಿ ಹೊರಬನ್ನಿ – ಬಿ.ಟಿ. ಲಲಿತಾ ನಾಯಕ್
2. ಕತ್ತೆ ಮತ್ತು ಧರ್ಮ – ಸಿದ್ದಲಿಂಗಯ್ಯ
3. ವಿಚಾರ ಕ್ರಾಂತಿಗೆ ಆಹ್ವಾನ – ಕುವೆಂಪು

ಘಟಕ : 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಚರಿತ್ರೆಯೆಂದರೆ... – ಎಚ್.ಎಸ್. ಅನುಪಮ
2. 'ಇಲ್ಲಿ ಯಾರೂ ಮುಖ್ಯರಲ್ಲ, ಯಾರೂ ಅಮುಖ್ಯರಲ್ಲ' – ಕೃಪಾಕರ ಸೇನಾನಿ
3. ಅಂಗುಲಿಮಾಲ ಪುಣ್ಯಾಕ್ಷನಾದದ್ದು – ಪ್ರಭುಶಂಕರ

ಪಠ್ಯಪುಸ್ತಕ : ವಿಜ್ಞಾನಗಂಗೋತ್ರಿ – 1

Course Articulation Matrix – 22KAN102

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	2	2	3	2	3	2	2	2	2
CO 2	3	2	3	2	2	3	2	3	2	2	2	2
CO 3	3	3	3	2	2	3	2	3	1	1	1	2
CO 4	3	3	2	2	-	3	2	3	2	2	2	2
Weighted Average	**3**	**2.75**	**2.5**	**2**	**2**	**3**	**2**	**3**	**1.75**	**1.75**	**1.75**	**2**

ಬಿ.ಎಸ್ಸಿ

ಸೆಮಿಸ್ಟರ್–2

Course Code: 22KAN202	**Course Title:** ಕನ್ನಡಭಾಷೆ – 2
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1.ಬದುಕಿನಲ್ಲಿ ಬರಬಹುದಾದ ಯಾವುದೇ ಕಷ್ಟ–ಸುಖಗಳನ್ನು ಸಮಾನವಾಗಿ ಸ್ವೀಕರಿಸುವ ಮನೋಧರ್ಮ ಬೆಳೆಸಿಕೊಳ್ಳುವರು.

CO 2.ಜೀವನದಲ್ಲಿ ಉತ್ತಮ ಕನಸುಗಳನ್ನು ಕಾಣುವುದರೊಂದುಗೆ ಅವುಗಳನ್ನು ಸಾಕಾರಗೊಳಿಸು ಕಡೆ ಸದಾ ಕಾರ್ಯಪ್ರವೃತ್ತರಾಗಿರುತ್ತಾರೆ.

CO 3.ಪ್ರಕೃತಿಯ ಜೀವಸಂಕುಲದ ಬಹುಮುಖ್ಯ ಭಾಗವಾದ ಮಳೆಯ ಮಹತ್ವವನ್ನು ಅರಿಯುತ್ತಾರೆ.

CO 4.ಮಾಹಿತಿ ತಂತ್ರಜ್ಞಾನ ಕ್ಷೇತ್ರದಲ್ಲಿ ಕನ್ನಡಭಾಷೆ ಮತ್ತು ಸಾಹಿತ್ಯದ ಬಳಕೆಯನ್ನು ಕಲಿಯುತ್ತಾರೆ.

ಘಟಕ : 1 ಜೀವನ ಕಲೆ **14 ಗಂಟೆಗಳು**

1. ಸಂಬಳದ ಸಂಜೆ – ಕೆ.ಎಸ್. ನರಸಿಂಹಸ್ವಾಮಿ
2. ಅವ್ವ – ಪಿ. ಲಂಕೇಶ್
3. ಚಂದ್ರನ ಬೊಂಬೆ ಪಾಠಗಳು – ನಟರಾಜ್ ಹುಳಿಯಾರ್
   ('ಕಾಮನ ಹುಣ್ಣಿಮೆ' ಕಾದಂಬರಿಯ ಆಯ್ದ ಭಾಗ)

ಘಟಕ : 2 ಕನಸು **14 ಗಂಟೆಗಳು**

1. ತಿರುಕನ ಕನಸು – ಮುಪ್ಪಿನ ಷಡಕ್ಷರಿ
2. ಒಂದು ಹುಡುಗನಿಗೆ ಬಿದ್ದ ಕನಸು – ಬೆಸಗರಹಳ್ಳಿ ರಾಮಣ್ಣ
3. ಕನಸು ಕಾಣಿರಿ– ಕನಸುಗಳ ಶಕ್ತಿ – ಎ.ಪಿ.ಜೆ. ಅಬ್ದುಲ್ ಕಲಾಂ

ಘಟಕ : 3 ಮಳೆ **14 ಗಂಟೆಗಳು**

1. ತೆಂಕಣಗಾಳಿಯಾಟ – ಪಂಜೆ ಮಂಗೇಶರಾಯ
2. ಬರ – ಯು.ಆರ್. ಅನಂತಮೂರ್ತಿ
3. ಮೋಡ ಬಿತ್ತನೆ ಮತ್ತು ಕೃತಕ ಮಳೆ – ಪ್ರೊ.ಕೆ.ಭೈರಪ್ಪ

ಘಟಕ : 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಗೂನಮ್ಮನ ಮೆಡಿಸನ್ – ಕೇಶವರೆಡ್ಡಿ ಹಂದ್ರಾಳ
2. ಮಾಹಿತಿ ತಂತ್ರಜ್ಞಾನ ಮತ್ತು ಕನ್ನಡ – ಟಿ.ಜಿ. ಶ್ರೀನಿಧಿ
3. ಕೀಟದಿಂದ ಕೋಟಿ ನಾಶ – ಶಿವಾನಂದ ಕಳವೆ

ಪಠ್ಯಪುಸ್ತಕ : ವಿಜ್ಞಾನಗಂಗೋತ್ರಿ – 2

Course Articulation Matrix - 22KAN202

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	2	2	3	-	3	2	2	2	2
CO 2	3	3	3	3	2	3	1	3	-	2	2	2
CO 3	3	3	2	2	2	3	3	3	2	2	2	2
CO 4	3	3	2	2	3	3	1	3	2	2	2	2
Weighted Average	**3**	**3**	**2.25**	**2.25**	**2.25**	**3**	**1.66**	**3**	**2**	**2**	**2**	**2**

ಸೆಮಿಸ್ಟರ್–1

Course Code: 22KAN103	**Course Title:** ಕನ್ನಡಭಾಷೆ – 1
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1.ಕನ್ನಡ ನಾಡು–ನುಡಿಯ ಏಳಿಗೆಗಾಗಿ ಶ್ರಮಿಸುತ್ತಾರೆ.

CO 2.ಬದುಕಿನಲ್ಲಿ ಸಹಿಷ್ಣುತಾ ಗುಣವನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುವರು.

CO 3.ದೇಶಿ ಬದುಕಿನೆಡೆಗೆ ಮುಖ ಮಾಡುತ್ತಾರೆ.

CO 4.ನಿಸ್ವಾರ್ಥಗುಣವನ್ನು ಮೈಗೂಡಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

ಘಟಕ–1 ಕನ್ನಡ ನಾಡು – ನುಡಿ ಚಿಂತನೆ **14 ಗಂಟೆಗಳು**

1. ಕನ್ನಡಾಂಬೆಯ ಹಿರಿಮೆ – ಬೆನಗಲ್ ರಾಮರಾವ್
2. ಕಟ್ಟುವೆವು ನಾವು – ಗೋಪಾಲಕೃಷ್ಣ ಅಡಿಗ
3. ಡಾ. ರಾಜ್‌ಕುಮಾರ್ ಎಂಬ ಬೆವರಿನ ಮನುಷ್ಯ – ಬರಗೂರು ರಾಮಚಂದ್ರಪ್ಪ

ಘಟಕ–2 ಸಂಸ್ಕೃತಿ **14 ಗಂಟೆಗಳು**

1. ಅಮ್ಮ, ಆಚಾರ ನಾನು – ಕೆ.ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್
2. ವೀರಮಾನ್ಯ – ಬೆಟಗೇರಿ ಕೃಷ್ಣಶರ್ಮ
3. ಜಲಗಾರ ನಾಟಕದ ಆಯ್ದಭಾಗ (ಮೊದಲ ದೃಶ್ಯ) – ಕುವೆಂಪು

ಘಟಕ–3 ಜಾಗತೀಕರಣ **14 ಗಂಟೆಗಳು**

1. ಗಿರಣಿ ವಿಸ್ತಾರ ನೋಡಮ್ಮ – ಶಿಶುನಾಳ ಶರೀಫ
2. ಹುಲಿ ಸವಾರಿ – ವಿವೇಕಶಾನಭಾಗ
3. ನಾನ್ಯಾರಿಗಲ್ಲದವಳು – ಜಿ.ವಿ. ಆನಂದಮೂರ್ತಿ

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ದಿಕ್ಕಿಲ್ಲದ ಹಾಡು – ಡಾ. ಚೆನ್ನಣ್ಣವಾಲೀಕಾರ
2. ಪೂರ್ಣತೆಯ ಪರಮ ಕಲೆ – ಕೆ.ಸಿ. ಶಿವಪ್ಪ
3. ಕುಣಿಯುವ ಕುರುಡ ಕಾಂಚಾಣ – ಪ್ರೊ.ಜಿ. ಚಂದ್ರಶೇಖರ

ಪಠ್ಯಪುಸ್ತಕ : ವಾಣಿಜ್ಯಗಂಗೋತ್ರಿ – 1

Course Articulation Matrix – 22KAN103

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	2	2	3	2	3	2	3	2	3
CO 2	3	3	2	2	1	3	2	3	-	-	-	2
CO 3	3	3	2	2	2	3	2	3	2	2	2	2
CO 4	3	3	3	2	2	3	3	3	1	1	1	2
Weighted Average	**3**	**3**	**2.25**	**2**	**1.75**	**3**	**2.25**	**3**	**1.66**	**2**	**1.66**	**2.25**

ಬಿ.ಕಾಂ.

ಸೆಮಿಸ್ಟರ್–2

Course Code: 22KAN203	**Course Title:** ಕನ್ನಡಭಾಷೆ – 2
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1.ಪ್ರಕೃತಿ ಸೌಂದರ್ಯದ ಆರಾಧಕರಾಗುತ್ತಾರೆ.

CO 2.ವೈಜ್ಞಾನಿಕ ಮನೋಭಾವ ಬೆಳೆಸಿಕೊಳ್ಳುತ್ತಾರೆ.

CO 3.ಪರಿಸರದ ಬಗ್ಗೆ ಕಾಳಜಿ ಹೊಂದುವರು.

CO 4.ವಾಣಿಜ್ಯಪತ್ರ ಹಾಗೂ ವರದಿ ತಯಾರಿಸುವುದನ್ನು ಕಲಿಯುತ್ತಾರೆ.

ಘಟಕ : 1 ಸೌಂದರ್ಯ **14 ಗಂಟೆಗಳು**

1. ಇಬ್ಬನಿಯ ಅವತಾರ! – ಕುವೆಂಪು
2. ಮಂಕುತಿಮ್ಮನ ಕಗ್ಗ (ಆಯ್ದಭಾಗ) – ಡಿವಿಜಿ
3. ತೊಳೆದ ಮುತ್ತು – ಕೆರೂರು ವಾಸುದೇವಾಚಾರ್ಯ

ಘಟಕ : 2 ಭಕ್ತಿ **14 ಗಂಟೆಗಳು**

1. ಭಕ್ತಿಯೆಂಬ ಪೃಥ್ವಿಯ ಮೇಲೆ.. (ವಚನಗಳು) – ಬಸವೇಶ್ವರ
2. ಹರಕೆಗಳು (ಪ್ರಬಂಧ) – ಎ.ಎನ್. ಮೂರ್ತಿರಾವ್
3. ಹಬ್ಬ ಮತ್ತು ಬಲಿ – ಬಿ.ಟಿ. ಲಲಿತಾನಾಯಕ್

ಘಟಕ : 3 ದೇಸಿಯತೆ **14 ಗಂಟೆಗಳು**

1. ಗ್ರಾಮದೇವತೆ – ಡಾ. ಸಿದ್ದಲಿಂಗಯ್ಯ
2. ಕಥೆ ಹೇಳು ಗುಬ್ಬಚ್ಚಿ ನಿನ್ನ ವ್ಯಥೆಯ ಕಥೆ ಹೇಳು – ಕೆ.ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್
3. ಬಕಾಸುರನನ್ನು ಕೊಂದ ಪರ್ವ (ಜನಪದ ಮಹಾಭಾರತ) – ಡಾ.ಪಿ.ಕೆ.ರಾಜಶೇಖರ

ಘಟಕ : 4. ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಅ) ವಾಣಿಜ್ಯ ಪತ್ರಗಳು
   ಆ) ವರದಿಗಳು
2. ಮಾರುಕಟ್ಟೆ ನಿರ್ವಹಣೆಯಲ್ಲಿ ಜಾಹೀರಾತುಗಳ ಪಾತ್ರ
3. ಉದ್ಯಮ ಲೋಕದ ಸಾಧಕರು (ಜೆ.ಆರ್.ಡಿ ಟಾಟಾ, ಡಾ.ವರ್ಗಿಸ್ ಕುರಿಯನ್, ಎನ್.ಆರ್. ನಾರಾಯಣ ಮೂರ್ತಿ ಮತ್ತು ರೌನಕ್ ಸಿಂಗ್)

ಪಠ್ಯಪುಸ್ತಕ : ವಾಣಿಜ್ಯಗಂಗೋತ್ರಿ – 2

Course Articulation Matrix – 22KAN203

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	3	3	3	2	2	2	2
CO 2	3	3	3	2	2	3	3	3	2	1	2	3
CO 3	3	3	3	2	1	3	3	3	2	2	3	2
CO 4	3	3	2	3	2	2	3	3	2	2	3	2
Weighted Average	**3**	**3**	**2.75**	**2.25**	**1.75**	**2.75**	**3**	**3**	**2**	**1.75**	**2.5**	**2.25**

ಬಿ.ಬಿ.ಎ

ಸೆಮಿಸ್ಟರ್ – 1

Course Code: 22KAN104	**Course Title:** ಕನ್ನಡಭಾಷೆ – 1
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1. ಕನ್ನಡ ನಾಡು–ನುಡಿಯ ಅಸ್ತಿತ್ವಕ್ಕಾಗಿ ಹೋರಾಡುತ್ತಾರೆ.
CO 2. ದೇಶಿ ಬದುಕಿನ ಕಡೆಗೆ ಮುಖ ಮಾಡುತ್ತಾರೆ.
CO 3. ಭಾವೈಕ್ಯತೆಯಿಂದ ಬದುಕುವುದನ್ನು ಕಲಿಯುತ್ತಾರೆ.
CO 4. ಲಿಂಗಸಮಾನತೆಗೆ ಒತ್ತು ನೀಡುತ್ತಾರೆ.

ಘಟಕ : 1 ಕನ್ನಡ ನಾಡು – ನುಡಿ ಚಿಂತನೆ **14 ಗಂಟೆಗಳು**

1. ಸಾಯುತಿದೆ ನಿಮ್ಮ ನುಡಿ – ಕುವೆಂಪು
2. ನಿಜಗಲ್ಲಿನ ರಾಣಿ – ಶ್ರೀನಿವಾಸ
3. ನನ್ನ ಕನ್ನಡ ಜಗತ್ತು – ಕೆ.ವಿ. ಸುಬ್ಬಣ್ಣ

ಘಟಕ : 2 ಆಧುನಿಕತೆ **14 ಗಂಟೆಗಳು**

1. ರಂಗೋಲಿ ಮತ್ತು ಮಗ – ಕೆ.ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್
2. ಕಳಚಬೇಕಾದ ಇತರ ಯಂತ್ರಗಳು – ಪ್ರಸನ್ನ
3. ಡಾಂಬರು ಬಂದುದು – ದೇವನೂರು ಮಹಾದೇವ

ಘಟಕ : 3 ಕುಟುಂಬ **14 ಗಂಟೆಗಳು**

1. ಬಾಳಿನ ಹಂಬಲು – ಪು.ತಿ.ನ
2. ಅವ್ವ – ಎಲ್. ಹನುಮಂತಯ್ಯ
3. ತುಂಬಿದ ಕೊಡ – ತ್ರಿವೇಣಿ

ಘಟಕ : 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಶಿವನ ಮೀಸುವ ಹಾಡು – ವೈದೇಹಿ
2. ಯುದ್ಧ – ಸವಿತಾ ನಾಗಭೂಷಣ
3. ಧರ್ಮಬಲೆ ಬೀಸಿದಾಗ – ಸಾ.ರಾ. ಅಬೂಬಕರ್

ಪಠ್ಯಪುಸ್ತಕ : ನಿರ್ವಹಣಾಗಂಗೋತ್ರಿ – 1

Course Articulation Matrix – 22KAN104

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	3	3	3	3	3	2	3	2	2
CO 2	3	3	3	2	3	3	3	3	2	3	3	2
CO 3	3	3	3	3	1	3	1	3	2	3	2	2
CO 4	3	3	3	2	3	3	-	3	2	2	2	2
Weighted Average	**3**	**3**	**2.75**	**2.5**	**2.5**	**3**	**2.33**	**3**	**2**	**2.75**	**2.25**	**2**

ಸೆಮಿಸ್ಟರ್ – 2

Course Code: 22KAN204	**Course Title:** ಕನ್ನಡಭಾಷೆ – 2
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1. ಶ್ರಮಸಂಸ್ಕೃತಿಯನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುವರು.

CO 2. ಜಾತ್ಯಾತೀತ ಮನೋಭಾವ ರೂಢಿಸಿಕೊಳ್ಳುವರು.

CO 3. ಜೀವನದಲ್ಲಿ ತ್ಯಾಗ, ಆದರ್ಶಗಳನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುವರು.

CO 4. ಕನ್ನಡ ಸಾಹಿತ್ಯದ ವಿವಿಧ ಪ್ರಕಾರಗಳನ್ನು ಓದುತ್ತಾರೆ.

ಘಟಕ : 1 ಕಾಯಕ **14 ಗಂಟೆಗಳು**

1. ವಚನಗಳು – (ಆಯ್ದ ಐದು ವಚನಕಾರರು)
2. ಮೋಚಿ – ಭಾರತೀಪ್ರಿಯ
3. ರಂಗದ ಮೇಲೆ ಇರಲಿ ನನ್ನ ಕೊನೆ – ಬಿ. ಜಯಶ್ರೀ

ಘಟಕ : 2 ಸಾಮರಸ್ಯ **14 ಗಂಟೆಗಳು**

1. ನಾವೆಲ್ಲರೂ ಒಂದೇ – ಎಂ. ಗೋಪಾಲಕೃಷ್ಣ ಅಡಿಗ
2. ಮಗು ಮತ್ತು ಹಣ್ಣುಗಳು – ಎಚ್.ಎಸ್. ಶಿವಪ್ರಕಾಶ್
3. ಗಿರಿಜವ್ವನ ರೊಟ್ಟಿ – ಅನಕೃ

ಘಟಕ : 3 ಅಂತಃಕರಣ **14 ಗಂಟೆಗಳು**

1. ನೀ ಹೀಂಗ ನೋಡಬ್ಯಾಡ ನನ್ನ – ಅಂಬಿಕಾತನಯದತ್ತ
2. ನಿಟ್ಟುಸಿರಿನಲಿ ನುಂಗಿದನು ಮನದ ಅನುಭಾವವನು – ಸುಜನಾ
2. ಅವ್ವ – ಗೀತಾ ನಾಗಭೂಷಣ

ಘಟಕ : 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಕಲ್ಲುಸಕ್ಕರೆ ಕೊಳ್ಳಿರೊ – ಪುರಂದರ ದಾಸರು
2. ಸಾಮಾನ್ಯ ಮನುಷ್ಯನು ಬಾನಂಗಳದಲ್ಲಿ ವಿಹರಿಸಲಿ – ಕ್ಯಾಪ್ಟನ್ ಗೋಪಿನಾಥ್
3. ದೇವರ ಹೆಣ – ಕುಂ. ವೀರಭದ್ರಪ್ಪ

ಪಠ್ಯಪುಸ್ತಕ : ನಿರ್ವಹಣಾಗಂಗೋತ್ರಿ – 2

Course Articulation Matrix – 22KAN204

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	3	3	3	2	2	1	2
CO 2	3	3	3	2	2	3	-	3	2	2	1	2
CO 3	3	3	3	3	2	3	1	3	2	2	2	2
CO 4	3	3	3	3	2	3	2	2	2	2	3	2
Weighted Average	**3**	**3**	**3**	**2.5**	**2**	**3**	**2**	**2.75**	**2**	**2**	**1.75**	**2**

ಸೆಮಿಸ್ಟರ್ – 1

Course Code: 22KAN105	**Course Title:** ಕನ್ನಡಭಾಷೆ – 1
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1.ಕನ್ನಡ ನಾಡು–ನುಡಿಯ ಏಳಿಗೆಗಾಗಿ ಶ್ರಮಿಸುತ್ತಾರೆ.
CO 2.ಪರಿಸರಮಾಲಿನ್ಯವನ್ನು ತಡೆಯುವಲ್ಲಿ ಕಾರ್ಯಪ್ರವೃತ್ತರಾಗುತ್ತಾರೆ.
CO 3.ಹರೆಯದ ಮಹತ್ವ ಅರಿತು, ಉತ್ತಮ ವ್ಯಕ್ತಿತ್ವ ರೂಪಿಸಿಕೊಳ್ಳುವರು.
CO 4.ತಂತ್ರಜ್ಞಾನದಲ್ಲಿ ಕನ್ನಡಭಾಷೆ ಅಳವಡಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

ಘಟಕ – 1 ಕನ್ನಡ ನಾಡು–ನುಡಿ–ಚಿಂತನೆ **14 ಗಂಟೆಗಳು**

1. ಕನ್ನಡಿಗರ ತಾಯಿ – ಎಂ. ಗೋವಿಂದ ಪೈ
2. ಕಾಣಿಕೆ – ಬಿ.ಎಂ.ಶ್ರೀ
3. ಕನ್ನಡ ಮನಸ್ಸು – ಹಾ.ಮಾ. ನಾಯಕ

ಘಟಕ – 2 ಆಕಾಶ **14 ಗಂಟೆಗಳು**

1 ಚಂದ್ರನನ್ನು ಕರೆಯಿರಿ ಭೂಮಿಗೆ – ಸವಿತಾ ನಾಗಭೂಷಣ
2. ಮೋಡಗಳ ಸಾವು – ಅಗ್ರಹಾರ ಕೃಷ್ಣಮೂರ್ತಿ
3. ಆಕಾಶಕ್ಕೆ ನೀಲಿ ಪರದೆ – ಬೊಳುವಾರು ಮಹಮದ್ ಕುಂಞಿ

ಘಟಕ – 3 ತಾರುಣ್ಯ **14 ಗಂಟೆಗಳು**

1. ಎಲ್ಲವಳೆಲ್ಲವಳೆಲ್ಲವಳು – ಪು. ತಿ. ನ
2. ಒಂದು ಖಾಸಗಿ ಪತ್ರ – ವಿನಯಾ ಒಕ್ಕುಂದ
3. ಹದಿಹರೆಯದವರ ಅವಶ್ಯಕತೆಗಳು – ಸಿ. ಆರ್. ಚಂದ್ರಶೇಖರ್

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಇಲ್ಲಿ ಏನಾದರೂ ಬರೆಯಿರಿ – ಎಂ. ಆರ್. ಕಮಲ
2. ಕನ್ನಡ ಮತ್ತು ಕಂಪ್ಯೂಟರ್ – ಟಿ. ಜಿ. ಶ್ರೀನಿಧಿ
3. ಅ. ಕನ್ನಡದಲ್ಲಿ ಗಣಕದ ಬಳಕೆಯ ಇತಿಹಾಸ, ಬೆಳವಣಿಗೆ ಮತ್ತು ಹೊಸ ಸಾಧ್ಯತೆಗಳು.
   ಆ. ಕನ್ನಡ ಭಾಷೆ ಮತ್ತು ತಂತ್ರಾಂಶಗಳು.
   ಇ. ಕನ್ನಡದಲ್ಲಿ ಗಣಕದ ಬಳಕೆಗೆ ಶ್ರಮಿಸಿದ ತಂತ್ರಜ್ಞರುಗಳ ಪರಿಚಯ.

ಪಠ್ಯಪುಸ್ತಕ : ಗಣಕಗಂಗೋತ್ರಿ – 1

Course Articulation Matrix – 22KAN105

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	3	2	3	2	2	2	2
CO 2	3	2	3	2	2	3	3	3	2	2	1	2
CO 3	3	3	2	2	2	3	-	-	2	1	-	2
CO 4	3	2	2	2	3	3	-	2	2	2	2	2
Weighted Average	**3**	**2.5**	**2.5**	**2**	**2.25**	**3**	**2.5**	**2.66**	**2**	**1.75**	**1.66**	**2**

ಬಿ.ಸಿ.ಎ.

ಸೆಮಿಸ್ಟರ್–2

Course Code: 22KAN205	**Course Title:** ಕನ್ನಡಭಾಷೆ – 2
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1.ಜಾಗತೀಕರಣದ ಪ್ರಭಾವಗಳನ್ನು ಅರಿತು ವರ್ತಿಸುತ್ತಾರೆ.

CO 2.ತಂತ್ರಜ್ಞಾನದ ಅಗತ್ಯತೆಯನ್ನು ಅರಿತು, ಕನ್ನಡಭಾಷೆ ಮತ್ತು ಸಾಹಿತ್ಯವನ್ನು ತಂತ್ರಜ್ಞಾನದಲ್ಲಿ ಅಳವಡಿಸುವುದಕ್ಕೆ ಮುಂದಾಗುತ್ತಾರೆ.

CO 3.ಜೀವನದಲ್ಲಿ ಸುಖಮಯವಾದ ದಾಂಪತ್ಯವನ್ನು ನಿರ್ಮಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

CO 4.ತಂತ್ರಜ್ಞಾನದಲ್ಲಿ ಕನ್ನಡ ಬೆಳವಣಿಗೆಯ ಇತಿಹಾಸವನ್ನು ಅರಿಯುತ್ತಾರೆ.

ಘಟಕ– 1 ವಾಣಿಜ್ಯ **14 ಗಂಟೆಗಳು**

1. ಮನೆಯಿಂದ ಮನೆಗೆ – ಕೆ.ಎಸ್. ನರಸಿಂಹಸ್ವಾಮಿ
2. ಕಟ್ಟಡದ ಕೆಲಸಗಾರರು – ಎಚ್.ಎಸ್. ಶಿವಪ್ರಕಾಶ್
3. ಜಾಗತೀಕರಣ ಮತ್ತು ಸಂಸ್ಕೃತಿ – ರಾಜೇಂದ್ರ ಚೆನ್ನಿ

ಘಟಕ – 2 ತಂತ್ರಜ್ಞಾನ **14 ಗಂಟೆಗಳು**

1. ಗಿರಣಿಯ ವಿಸ್ತಾರ ನೋಡಮ್ಮ – ಶಿಶುನಾಳ ಷರೀಫ

2. ದಿಕ್ಕು – ಪ್ರತಿಭಾ ನಂದಕುಮಾರ್
3. ರಾಗಿಬ್ರಹ್ಮ – ಲಕ್ಷ್ಮಣಯ್ಯ

ಘಟಕ – 3 ದಾಂಪತ್ಯ **14 ಗಂಟೆಗಳು**

1. ಮನದನ್ನೆ – ದ. ರಾ. ಬೇಂದ್ರೆ
2. ತುಕ್ಕೋಜಿ – ಕೆ.ಪಿ.ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ
3. ಮರಳಿ ಬದುಕಿಗೆ ಈ ಪಯಣ – ನೇಮಿಚಂದ್ರ

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಮತ್ತೆ ಭ್ರೂಣವಾಗಬೇಕು – ಸುಕನ್ಯಾ ಮಾರುತಿ
2. ಗಣಕಾಸುರ – ಡಾ. ವೈ.ವೈ. ಕೊಕ್ಕನವರ
3. ಅರಿವಿನ ಜಾಲತಾಣ ಮತ್ತು ಸಾಮಾಜಿಕ ಜಾಲತಾಣಗಳಲ್ಲಿ ಕನ್ನಡ.

ಪಠ್ಯಪುಸ್ತಕ : ಗಣಕಗಂಗೋತ್ರಿ – 2

Course Articulation Matrix – 22KAN205

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	2	3	2	3	2	3	2
CO 2	3	3	2	2	2	3	-	3	2	2	3	2
CO 3	3	3	3	2	2	3	-	3	3	2	-	2
CO 4	3	3	3	2	3	3	3	3	2	2	3	2
Weighted Average	**3**	**3**	**2**	**2**	**2.25**	**2.75**	**3**	**2.75**	**2.5**	**2**	**3**	**2**

ಕನ್ನಡ ಮುಕ್ತ ಆಯ್ಕೆ (OE)

ಸೆಮಿಸ್ಟರ್ – 1

Course Code: 22OEKAN101	**Course Title:** ಕನ್ನಡವ್ಯಾಕರಣ
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 03 (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1. ಕನ್ನಡ ಸಂಧಿ, ಸಮಾಸಗಳ ಪ್ರಯೋಗಗಳನ್ನು ಕಲಿಯುತ್ತಾರೆ.

CO 2. ಕನ್ನಡವನ್ನು ಶುದ್ಧವಾಗಿ ಬರೆಯಲು ಮತ್ತು ಮಾತನಾಡಲು ಕಲಿಯುತ್ತಾರೆ.

CO 3. ಕನ್ನಡ ಬಳಕೆಯಲ್ಲಿ ಲಿಂಗ, ವಚನಗಳ ಬಳಕೆಯನ್ನು ಕಲಿಯುವರು.

CO 4. ಕನ್ನಡ ದ್ವಿರುಕ್ತಿ ಪದಗಳ ಪರಿಚಯವಾಗುತ್ತದೆ.

ಘಟಕ – 1 : ಸಂಧಿ–ಸಮಾಸಗಳು **20 ಗಂಟೆಗಳು**

- **ಸಂಧಿ : ವಿಧಗಳು : ಕನ್ನಡ ಸಂಧಿಗಳು :** ಲೋಪ, ಆಗಮ, ಆದೇಶ,
- **ಸಂಸ್ಕೃತ ಸಂಧಿಗಳು :** ಸವರ್ಣದೀರ್ಘ ಸಂಧಿ, ಗುಣಸಂಧಿ, ವೃದ್ಧಿ ಸಂಧಿ, ಯಣ್ ಸಂಧಿ, ಜಸ್ತ್ವ, ಶ್ಚುತ್ವ, ಅನುನಾಸಿಕ
- **ಸಮಾಸ : ವಿಧಗಳು :** ತತ್ಪುರುಷ, ಕರ್ಮಧಾರಯ, ದ್ವಿಗು, ಬಹುವ್ರೀಹಿ, ಅಂಶಿ, ದ್ವಂದ್ವ, ಕ್ರಿಯಾ, ಗಮಕ, ಅರಿಸಮಾಸ

ಘಟಕ – 2 : ನಾಮಪದ ಹಾಗೂ ಇನ್ನಿತರ ವಿಚಾರಗಳು **10 ಗಂಟೆಗಳು**

- ನಾಮಪದ, ವಿಭಕ್ತಿಪ್ರತ್ಯಯ, ಗುಣವಾಚಕಗಳು, ಕ್ರಿಯಾಪದಗಳು,

ಘಟಕ – 3 : ಲಿಂಗ, ವಚನ, ತತ್ಸಮ–ತದ್ಭವಗಳು **06 ಗಂಟೆಗಳು**

ಘಟಕ – 4 : ದ್ವಿರುಕ್ತಿ, ಜೋಡುನುಡಿ **06 ಗಂಟೆಗಳು**

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು

1. ಕನ್ನಡ ಕೈಪಿಡಿ – ಕುವೆಂಪು ಕನ್ನಡ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
2. ಕನ್ನಡ ಛಂದಸ್ಸಿನ ಚರಿತ್ರೆ – ಕುವೆಂಪು ಕನ್ನಡ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
3. ಕನ್ನಡ ಮಧ್ಯಮ ವ್ಯಾಕರಣ – ತೀ.ನಂ.ಶ್ರೀ.
4. ಹೊಸಗನ್ನಡ ಸಮಗ್ರ ವ್ಯಾಕರಣ – ಪ್ರೊ. ಅರಳಗುಪ್ಪಿ
5. ಕನ್ನಡದ ಅಲಂಕಾರಶಾಸ್ತ್ರ – ಕೆ. ಕೃಷ್ಣಮೂರ್ತಿ
6. ಹೊಸಗನ್ನಡ ಛಂದಸ್ಸು ಛಂದಃ ಸ್ವರೂಪ – ಪ್ರೊ. ಟಿ.ವಿ. ವೆಂಕಟಾಚಲಶಾಸ್ತ್ರಿ
7. ಛಂದಃಸ್ಸಂಪುಟ – ಡಾ. ಎಲ್. ಬಸವರಾಜು
8. ಭಾರತೀಯ ಕಾವ್ಯಮೀಮಾಂಸೆ – ತೀ.ನಂ.ಶ್ರೀ.
9. ಭಾರತೀಯ ಮತ್ತು ಪಾಶ್ಚಾತ್ಯ ಕಾವ್ಯಮೀಮಾಂಸೆ – ಅಬ್ದುಲ್ ಬಷೀರ್
10. ಅಲಂಕಾರ ಸಂಗಾತಿ – ಡಾ. ಗಿರಿಜಾಪತಿ ಎಂ.
11. ಛಂದೋಮಿತ್ರ – ಅ.ರಾ. ಮಿತ್ರ

Course Articulation Matrix - 22OEKAN101

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	2	1	1	1	3	2	2
CO 2	3	2	3	2	2	2	1	2	2	3	2	2
CO 3	3	2	1	2	1	2	1	2	2	1	2	2
CO 4	3	2	1	2	1	2	2	1	2	1	2	2
Weighted Average	**3**	**2.25**	**2**	**2**	**1.5**	**2**	**1**	**1.25**	**1.75**	**2**	**2**	**2**

ಕನ್ನಡ ಮುಕ್ತ ಆಯ್ಕೆ (OE)

ಸೆಮಿಸ್ಟರ್ – 2

Course Code : 22OEKAN201	**Course Title:** ಆಡಳಿತಾತ್ಮಕ ಕನ್ನಡ
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 03 (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1. ಯಾವುದೇ ಬಗೆಯ ವರದಿ ಮಾಡುವುದನ್ನು ಕಲಿಯುತ್ತಾರೆ.
CO 2. ಎಲ್ಲ ರೀತಿಯ ಪತ್ರಗಳನ್ನು ಬರೆಯುವುದನ್ನು ಕಲಿಯುವರು.
CO 3. ಆಡಳಿತದಲ್ಲಿ ಕನ್ನಡ ಬಳಕೆಯನ್ನು ಕಲಿಯುತ್ತಾರೆ.
CO 4.ಕನ್ನಡ ಗಾದೆಗಳು, ಒಗಡುಗಳು, ನುಡಿಗಟ್ಟುಗಳ ಬಳಕೆಯನ್ನು ರೂಢಿಸಿಕೊಳ್ಳುವರು.

ಘಟಕ – 1 : ಸಂಕ್ಷಿಪ್ತ ಲೇಖನ **11 ಗಂಟೆಗಳು**

ಘಟಕ – 2 : ಪತ್ರಲೇಖನ, ಪ್ರಬಂಧರಚನೆ **10 ಗಂಟೆಗಳು**

ಘಟಕ – 3 : ಆಡಳಿತಾತ್ಮಕ ಪದಕೋಶ – ಪರಿಕಲ್ಪನೆಗಳು **11 ಗಂಟೆಗಳು**

ಘಟಕ – 4 : ಗಾದೆಗಳು, ನುಡಿಗಟ್ಟುಗಳು, ಒಗಟುಗಳು **10 ಗಂಟೆಗಳು**

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು

1 ಕಛೇರಿ ಕೈಪಿಡಿ – ಕುವೆಂಪು ಕನ್ನಡ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ, ಮೈಸೂರು

2 ಆಡಳಿತ ಕನ್ನಡ – ಎಚ್ಚೆಸ್ಕೆ

3 ವಾಣಿಜ್ಯ ಕನ್ನಡ – ಎಚ್ಚೆಸ್ಕೆ

4 ವಾಣಿಜ್ಯ ಕನ್ನಡ ಪರಿಚಯ – ಪ್ರೊ.ಎಂ.ಎನ್. ಲಕ್ಷ್ಮೀದೇವಿ, ಪ್ರೊ.ಜಿ. ಅಬ್ದುಲ್ ಬಷೀರ್

5 ಆಡಳಿತ ಕನ್ನಡ – ಸಂ. ಡಾ. ಅಶೋಕ್ ಕುಮಾರ್ ರಂಜೇರ ಮತ್ತು ಇತರರು

6 ಮುತ್ತಿನ ಕಣಜ – ಡಾ.ಪಿ.ಕೆ. ರಾಜಶೇಖರ

7 ಭೂಮಿತೂಕದ ಮಾತು – ಡಾ.ಪಿ.ಕೆ. ರಾಜಶೇಖರ

Course Articulation Matrix - 22OEKAN201

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	3	2	2	2	1	1	2	3	2	2
CO 2	3	2	3	2	2	2	1	1	2	3	2	2
CO 3	3	1	2	1	2	1	2	2	1	1	2	2
CO 4	3	1	2	1	2	1	2	1	2	2	1	2
Weighted Average	**3**	**1.5**	**2.5**	**1.5**	**2**	**1.5**	**1.5**	**1.25**	**1.75**	**2.25**	**1.75**	**2**

ನಿರಂತರ ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ ಮತ್ತು ಸೆಮಿಸ್ಟರ್ ಅಂತಿಮ ಪರೀಕ್ಷೆಗೆ ಸೂಚಿಸುವ ಮಾರ್ಗಸೂಚಿಗಳು

ಪ್ರತಿ ಪತ್ರಿಕೆಯ ಒಟ್ಟು ಪಾಠ ಘಟಕಗಳು – 04 ಘಟಕಗಳು

(ಪ್ರಾಥಮಿಕ ಪರಿಚಯ, ಸೈದ್ಧಾಂತಿಕ ವಿವರಣೆ ಸೇರಿದಂತೆ)

ಗಮನಿಸಿ : ಪರೀಕ್ಷೆಯ ಅಂಕಗಳು (ಬರವಣಿಗೆ) : 60 ಅಂಕಗಳು
ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ : 40 ಅಂಕಗಳು
———————
ಪ್ರತಿ ಪತ್ರಿಕೆಗೆ ಗರಿಷ್ಠ ಅಂಕಗಳು : 100 ಅಂಕಗಳು
———————

ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನದ ವಿವರಗಳು :

ಎಲ್ಲಾ ಸೆಮಿಸ್ಟರ್‌ಗಳಿಗೆ ಪ್ರತಿ ಪತ್ರಿಕೆಗೆ ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನವನ್ನು ಈ ಕೆಳಗಿನಂತೆ ಮಾಡಲಾಗುತ್ತದೆ

ಪರೀಕ್ಷೆ	ವಿವರ	ಅಂಕಗಳು
C-1	ಪ್ರತಿ ಸೆಮಿಸ್ಟರ್‌ನ ಪೂರ್ವಾರ್ಧದ ಕೊನೆಗೆ 7–8ನೇ ವಾರಗಳಲ್ಲಿ ಕಿರುಪರೀಕ್ಷೆ	20
C-2	ನಿಯೋಜಿತ ಪ್ರಬಂಧ ಡ	20
	ಒಟ್ಟು ಅಂಕಗಳು ್ಯಾ	40
C-3	ಪ್ರತಿ ಸೆಮಿಸ್ಟರ್‌ನ ಅಂತಿಮ ಪರೀಕ್ಷೆ ಸಮಯ 2 1/2 ಗಂಟೆಗಳು 60 ಅಂಕಗಳು	60
	ಒಟ್ಟು ಅಂಕಗಳು	**100**

ಹೊಸ ಶಿಕ್ಷಣ ನೀತಿ

ಮಾದರಿ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ – ಪ್ರಥಮ ಮತ್ತು ದ್ವಿತೀಯ ಸೆಮಿಸ್ಟರ್

(AECC & OE)

ಅವಧಿ : $2\frac{1}{2}$ Hours **ಅಂಕಗಳು : 60**

1. ಒಂದು ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಿ. 1 x 10 = 10

   (ಘಟಕ 1 ರಿಂದ 2 ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

2. ಒಂದು ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಿ. 1 x 10 = 10

   (ಘಟಕ 2 ರಿಂದ 2 ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

3. ಒಂದು ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಿ 1 x 10 = 10

   (ಘಟಕ 3 ರಿಂದ 2 ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

4. ಒಂದು ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಿ. 1 x 10 = 10

   (ಘಟಕ 4 ರಿಂದ 2 ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

5. ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. 2 x 5 = 10

   (ಘಟಕ 1, 2, 3, 4 ರಿಂದ ಪದ್ಯ ಅಥವಾ ಪಾಠದಿಂದ ನಾಲ್ಕು
   ಸಂದರ್ಭ ವಾಕ್ಯಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

6. ಒಂದು ವಿಷಯ ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. 1 x 5 = 5

   (ನಾಲ್ಕು ಘಟಕಗಳ ಪಠ್ಯದಲ್ಲಿನ ಒಂದು ವಿಷಯ ಕುರಿತು ವಿದ್ಯಾರ್ಥಿಗಳ ಸ್ವಂತ ಅನುಭವ, ಆಲೋಚನೆ, ಅಭಿಪ್ರಾಯ ಕುರಿತು ಬರೆಯಲು ಎರಡು ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

7. ಒಂದು ಪದ ಅಥವಾ ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿ. 5 x 1 = 5

   (ನಾಲ್ಕು ಘಟಕಗಳಲ್ಲಿ ಭಾಷಾಭ್ಯಾಸಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಐದು ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

DEPARTMENT OF KANNADA

MOTTO

Refine Cultural Values in Students

VISION

Imbibe Values for Promotion of Kannada Language and Literature

MISSION

Awareness of Richness of Kannada Language and Literature through the Age.

Involve Students Actively in Literary and Cultural activities to Orient them towards Society.

Program Outcome (PO) Attributes

PO 1: Domain Knowledge

PO 2: Problem Analysis

PO 3: Design and Development of Solutions

PO 4: Investigation

PO 5: Use of Modern Techniques/Tools

PO 6: Impact on Society

PO 7: Environment and Sustainability

PO 8: Moral and Ethical Values

PO 9: Individual and Team Work

PO 10: Communication

PO 11: Project Management and Finance

PO 12: Life-long Learning

List of BoS Members

Sl. No.	Category	Name and Designation	Address for Communication	E-mail and Mobile No.
1.	Chairperson	Dr. H R Thimmegowda Associated Professor	SBRR Mahajana First Grade College (Autonomous) Mysuru	thimmegowdahr.fgc@mahajana.edu.in **9972798708**
2.	Member	Dr. Vinodamma Assistant Professor	SBRR Mahajana First Grade College (Autonomous) Mysuru	vinodamma123@gmail.com **9964581858**
3.	Nominee by the Vice Chancellor	Dr. Lolakshi N K Professor	Kuvempu Kannada AdhyayanaSamstheMysore University, Mysore	nklolakshi@gmail.com 9480157279
4.	Two experts from other University/ Colleges	Dr. Lingarajaiah Assistant Professor	Vivekananda First Grade College, Rajajinagara, Bengaluru	drblingaraj@gmail.com **9008779997**
		Prof. Honnaganahalli Kariyanna Professor	University Arts College Tumkuru-572103	kariyannatumkuruniversity@gmail.com **6362854252**
5.	Alumnus	Sri Rajeeva K J Assistant Professor	Government Women First Grade College Vijayanagara, Mysuru	hellorajeeva@gmail.com **9481187919**

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ ವಿನ್ಯಾಸದ ಆಶಯಗಳು

ಹೊಸ ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿಯ ಆಶಯಗಳಿಗೆ ಅನುಗುಣವಾಗಿ ಕನ್ನಡ ಭಾಷಾ, ಮುಕ್ತ ಆಯ್ಕೆ ಕನ್ನಡ ಪಠ್ಯ ಕ್ರಮಗಳ ವಿನ್ಯಾಸವನ್ನು ರೂಪಿಸಲಾಗಿದೆ. ಕರ್ನಾಟಕದಾದ್ಯಂತ ವಿವಿಧ ವಿಶ್ವವಿದ್ಯಾಲಯಗಳು ಈತನಕ ಅರ್ಥಪೂರ್ಣವಾದ ಹಾಗೂ ವೈವಿಧ್ಯಮಯ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಅನುಸರಿಸುತ್ತಾ ಬಂದಿವೆ. ಸಾಹಿತ್ಯದ ಮೂಲಗುಣವಾದ ನಿತ್ಯನೂತನತೆಗೆ ಅನುಗುಣವಾಗಿ ಹೊಸತನವನ್ನು ತರಲು ಪ್ರಯತ್ನಿಸಲಾಗಿದೆ. ಈಗ ಹೊಸ ಪಠ್ಯಕ್ರಮದ ಪ್ರಕಾರ ಪ್ರಯೋಗಿಸಲ್ಪಟ್ಟು ಯಶಸ್ವಿಯಾಗಿರುವ ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯವು **"ವಿಷಯಾಧಾರಿತ ಪಠ್ಯಕ್ರಮ"** (Theme Based)ವನ್ನು ಅಳವಡಿಸಲು ಉದ್ಯುಕ್ತವಾಗಿದೆ. ಈ ಮೂಲಕ ಕಲಿಕೆ ಮತ್ತು ಫಲಿತಗಳ ನಡುವಿನ ಸಮತೋಲನವನ್ನು ಸಾಧಿಸುವುದು ಸಾಧ್ಯವಾಗುತ್ತದೆ. ಶಿಕ್ಷಣವು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಭಾಷಾ ಕೌಶಲ್ಯ, ಸಾಹಿತ್ಯದ ಮಾನವೀಯ ಸಂವೇದನೆ, ಸಮಕಾಲೀನ ವಿದ್ಯಾಮಾನಗಳ ಅರಿವು, ಸಂಸ್ಕೃತಿಯ ಬೆಳಕು ಮತ್ತು ರಾಷ್ಟ್ರೀಯತೆಯ ಮನೋಭಾವವನ್ನು ಕಟ್ಟಿಕೊಡುವುದರಲ್ಲಿ ಯಶಸ್ವಿಯಾಗಬೇಕು ಎನ್ನುವ ಹೊಸ ಶಿಕ್ಷಣ ನೀತಿಯ ಆಶಯವನ್ನು ವಿಷಯಾಧಾರಿತ ಪಠ್ಯಕ್ರಮದ ಮೂಲಕ ಸಾಧಿಸಿಕೊಳ್ಳುವುದು ಸಾಧ್ಯವಾಗುತ್ತದೆ. ಉದಾಹರಣೆಗೆ 'ನಾಡು–ನುಡಿ–ಚಿಂತನೆ'. 'ಸಾಮರಸ್ಯ', 'ಪರಿಸರ ಜಾಗತೀಕರಣ' ಮೊದಲಾದವು ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಉದ್ದೇಶಿತ ಫಲಿತಗಳನ್ನು ನೀಡುತ್ತವೆ. ಹಾಗೆಯೇ ಆಯಾ ಅಧ್ಯಯನ ಶಿಸ್ತುಗಳ ಸ್ವರೂಪಕ್ಕನುಗುಣವಾಗಿ ಒಂದು ಘಟಕವನ್ನು ಸ್ನಾತಕ ಅಧ್ಯಯನ ಮಂಡಳಿಯಲ್ಲಿ ಪರಿಶೀಲಿಸಿ ರೂಪಿಸಿ ಸಿದ್ಧಪಡಿಸಲಾಗಿದೆ.

ಭಾಷಾ ಪಠ್ಯಗಳನ್ನು ನಾಲ್ಕು ಸೆಮಿಸ್ಟರ್‌ಗಳಲ್ಲಿ ಪ್ರಥಮ ಭಾಷೆಯಾಗಿ ಬೋಧಿಸತಕ್ಕದ್ದು, ಪ್ರತಿ ಸೆಮಿಸ್ಟರ್‌ಗೂ 3 ಕ್ರೆಡಿಟ್‌ಗಳು ಹಾಗೂ ನಾಲ್ಕು ಗಂಟೆ ಬೋಧನಾ ಅವಧಿ ಇರುತ್ತದೆ. ಮುಕ್ತ ಆಯ್ಕೆ ಕನ್ನಡ ಪತ್ರಿಕೆಗಳನ್ನು ಎಲ್ಲ ಅಧ್ಯಯನ ಶಿಸ್ತುಗಳ ವಿದ್ಯಾರ್ಥಿಗಳೂ ನಾಲ್ಕು ಸೆಮಿಸ್ಟರ್‌ಗಳಿಗೂ ಆಯ್ಕೆ ಮಾಡಿಕೊಳ್ಳಲು ಅವಕಾಶವಿದೆ.

ಪದವಿ ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಗಳು

1) ಕಲಾಗಂಗೋತ್ರಿ (ಬಿ.ಎ. 3 ಮತ್ತು 4ನೇ ಸೆಮ್ ಕನ್ನಡ ಪಠ್ಯ)
2) ವಿಜ್ಞಾನಗಂಗೋತ್ರಿ (ಬಿಎಸ್ಸಿ 3 ಮತ್ತು 4ನೇ ಸೆಮ್ ಕನ್ನಡ ಪಠ್ಯ)
3) ಗಣಕಗಂಗೋತ್ರಿ (ಬಿಸಿಎ 3 ಮತ್ತು 4ನೇ ಸೆಮ್ ಕನ್ನಡ ಪಠ್ಯ)
4) ವಾಣಿಜ್ಯಗಂಗೋತ್ರಿ (ಬಿಕಾಂ 3 ಮತ್ತು 4ನೇ ಸೆಮ್ ಕನ್ನಡ ಪಠ್ಯ)
5) ವ್ಯವಹಾರ ನಿರ್ವಹಣಗಂಗೋತ್ರಿ (ಬಿಬಿಎ 3 ಮತ್ತು 4ನೇ ಸೆಮ್ ಕನ್ನಡ ಪಠ್ಯ)

COURSE STRUCTURE (NEP)

ಎ.ಇ.ಸಿ.ಸಿ. (A.E.C.C – Ability Enhancement Compulsory Course)

II Year

Course Type, Code and Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	L: T:P	C1	C2	C3		
Kannada – III Sem									
AECC(3)	ಕನ್ನಡ ಭಾಷೆ ಪತ್ರಿಕೆ–3 **BA:** 22KAN301 **BSc:** 22KAN302 **BCom:** 22KAN303 **BBA (All):** 22KAN304 **BCA:** 22KAN305	2	2	2:1:0 (3 Credits)	20	20	60	$2\frac{1}{2}$ Hour	100
OE(3)	ಆಧುನಿಕ ಪೂರ್ವ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಚಯ ಮತ್ತು ಪಠ್ಯ **22OEKAN301**	3	-	3:0:0 (3 Credits)	20	20	60	$2\frac{1}{2}$ Hour	100
Kannada – IV Sem									
AECC(4)	ಕನ್ನಡ ಭಾಷೆ ಪತ್ರಿಕೆ–4 **BA:** 22KAN401 **BSc:** 22KAN402 **BCom:** 22KAN403 **BBA (All):** 22KAN404 **BCA:** 22KAN405	2	2	2:1:0 (3 Credits)	20	20	60	$2\frac{1}{2}$ Hour	100
OE(4)	ಆಧುನಿಕ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಚಯ ಮತ್ತು ಪಠ್ಯ **22OEKAN401**	3	-	3:0:0 (3 Credits)	20	20	60	$2\frac{1}{2}$ Hour	100

ಅನುಬಂಧ

ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿ–2020

ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯ ಸ್ವರೂಪ

ಪ್ರೋಗ್ರಾಂವಾರು ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಕ್ರಮ :

ಶೈಕ್ಷಣಿಕ ವ್ಯವಸ್ಥೆಯಲ್ಲಿ ಭಾಷಾ ಪಠ್ಯಗಳು ಮತ್ತು ಭಾಷಾ ಅಧ್ಯಾಪಕರ ಜವಾಬ್ದಾರಿ ಎಲ್ಲರಿಗೂ ಗೊತ್ತಿರುವುದೇ ಆಗಿದೆ. ಹಲವು ಬಗೆಯ ಬಿಕ್ಕಟ್ಟುಗಳು ಮತ್ತು ವಿಷಮತೆಗಳು ಹೆಚ್ಚುತ್ತಿರುವ ಈ ಕಾಲಘಟ್ಟದಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳನ್ನು ಪ್ರಜ್ಞಾವಂತರನ್ನಾಗಿ, ಸಂವೇದನಾಶೀಲರನ್ನಾಗಿ ಮಾಡುವ ಅವಕಾಶ ಭಾಷಾ ಪಠ್ಯಗಳಲ್ಲಿ ಇರುತ್ತದೆ. ಆ ಅವಕಾಶವನ್ನು ಎಂದಿನಿಂದಲೂ ಭಾಷಾ ಪಠ್ಯ ಮಂಡಳಿಗಳು ಆಸ್ಥೆಯಿಂದ ನಿಭಾಯಿಸುತ್ತಲೇ ಬಂದಿವೆ.

ಹೊಸ ಶಿಕ್ಷಣ ನೀತಿಯ ಅನುಷ್ಠಾನದ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ರಚಿಸಲಾದ ಸಮಿತಿಯು ಇದನ್ನೇ ಬುನಾದಿಯಾಗಿಸಿಕೊಂಡು ಪಠ್ಯಕ್ರಮವನ್ನು ಕುರಿತ ನಕಾಶೆಯನ್ನು ರಚಿಸಿದೆ. ಕನ್ನಡವನ್ನು 'ಜ್ಞಾನದ ಭಾಷೆ'ಯಾಗಿ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ನೀಡಬೇಕೆನ್ನುವುದು ಸಮಿತಿಯ ಆಶಯ. ಹೊಸ ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿಯು ಈ ಅಂಶವನ್ನೇ ಉದ್ಯೋಗ ಮತ್ತು ಕೌಶಲ್ಯಗಳು ಶಿಕ್ಷಣದ ಮುಖ್ಯ ಗುರಿ ಎಂದು ಹೇಳಿದೆ. ಹೀಗಾಗಿ ತಾಯಿ ಭಾಷೆ ಕನ್ನಡದ ಮೂಲಕ ವಿದ್ಯಾರ್ಥಿಗಳು ಸ್ಥಳೀಯ, ರಾಷ್ಟ್ರೀಯ ಮತ್ತು ಜಾಗತೀಯ ಸವಾಲುಗಳನ್ನು ಸನ್ನದ್ಧರಾಗುವ ಬಗೆಯಲ್ಲಿ ಪಠ್ಯಕ್ರಮದ ವಿನ್ಯಾಸವನ್ನು ರೂಪಿಸಲಾಗಿದೆ. ಜಾಗತೀಕರಣವೂ ಸೇರಿದಂತೆ ಹಲವು ವಿದ್ಯಮಾನಗಳು ನಮ್ಮ ಸಾಮಾಜಿಕ ಮತ್ತು ಸಾಂಸ್ಕೃತಿಕ ಸನ್ನಿವೇಶಗಳನ್ನು ಸಮೀಕರಣಗಳನ್ನು, ಗ್ರಹಿಕೆಗಳನ್ನು ಆಳವಾಗಿ ಪ್ರಭಾವಿಸುತ್ತಿವೆ. ಇವು ನಮ್ಮ ಯುವ ತಲೆಮಾರುಗಳನ್ನು ತಮ್ಮ ಬೇರುಗಳಿಂದಲೇ ದೂರ ಮಾಡುತ್ತಾ ಅವರನ್ನು ಪರಕೀಯರನ್ನಾಗಿಸುತ್ತಿದೆ ಎನ್ನುವ ಆತಂಕ ಅಧ್ಯಾಪಕರನ್ನು ಕಾಡುತ್ತಿದೆ. ಈ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ನಾಡು–ನುಡಿ, ಜಲ, ಭೂಮಿ, ಸಮಕಾಲೀನ ಸವಾಲುಗಳನ್ನು ಕನ್ನಡದ ಅತ್ಯುತ್ತಮ ಪಠ್ಯಗಳ ಮುಖಾಂತರ ಕಲಿಸಬಹುದೆನ್ನುವ ನಂಬಿಕೆ ಈ ಸಮಿತಿಯದ್ದು. ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಹಿತ್ಯಕ ಅಭಿರುಚಿಯನ್ನು ಹೆಚ್ಚಿಸಬೇಕು, ಭಾಷೆ ಮತ್ತು ಸಾಹಿತ್ಯಗಳನ್ನು ಕುರಿತ ಪ್ರೀತಿಯನ್ನು ಹೆಚ್ಚಿಸಬೇಕು ಎನ್ನುವುದು ಪಠ್ಯಗಳ ಒಂದು ಆಯಾಮವಾದರೆ, ಮತ್ತೊಂದು ಆಯಾಮವು ನಮ್ಮ ಸಮೃದ್ಧ ಸಾಂಸ್ಕೃತಿಕ, ಸಾಹಿತ್ಯಕ ಪರಂಪರೆಯ ಅರಿವೂ ಅವರಲ್ಲಿ ಮೂಡಬೇಕೆನ್ನುವುದು. ಎರಡು ವರ್ಷಗಳ ಪಠ್ಯಗಳ್ಲಲಿ ಅವರಲ್ಲಿ ನಾಗರಿಕ ವ್ಯಕ್ತಿತ್ವದ ಧಾತುಗಳನ್ನು ತುಂಬಬೇಕು. ಸಾಹಿತ್ಯದ ಅಂತಃಕರಣ ಮತ್ತು ಸಾಮಾಜಿಕ ವ್ಯಕ್ತಿತ್ವದ ಬೌದ್ಧಿಕ ಅರಿವು ಅವರಲ್ಲಿ ಸಮನಾಗಿ ಬೆಳೆಯುತ್ತಾ ಹೋಗಬೇಕು. ಇವುಗಳಲ್ಲದೆ ಕನ್ನಡವು ಅವರ ವೃತ್ತಿಯ ದಾರಿಯೂ ಆಗಬೇಕು. ಹಲವು ವೃತ್ತಿಗಳನ್ನು ಅವರು ಅರಿಸಿಕೊಳ್ಳಲು ಅನುವಾಗುವ ಪಠ್ಯಕ್ರಮವೂ ಸೇರಬೇಕು. ಈ ಎಲ್ಲ ಅಂಶಗಳನ್ನು ಗಮನದಲ್ಲಿಟ್ಟುಕೊಂಡು ಸಮಿತಿಯು 'ವಿಷಯಾಧಾರಿತ ಪಠ್ಯ'ವನ್ನು ರೂಪಿಸಿದೆ.

ಬಿ.ಎ.

ಸೆಮಿಸ್ಟರ್ –3

Course Code: 22KAN301	**Course Title:** ಕನ್ನಡಭಾಷೆ – 3
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1:. ರಾಷ್ಟ್ರಪ್ರೇಮವನ್ನು ಹೊಂದಿದ ಉತ್ತಮ ಭಾರತೀಯ ನಾಗರೀಕರಾಗುತ್ತಾರೆ.

CO 2: ಕೃಷಿಯ ಮಹತ್ವವನ್ನು ಅರಿತು, ಕೃಷಿಯಲ್ಲಿ ತೊಡಗಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

CO 3: ಸಾಹಿತ್ಯ ಮತ್ತು ಕ್ರೀಡೆಯ ಮಹತ್ವ ಅರಿತು, ವಿವಿಧ ಕ್ರೀಡಾಪಟುಗಳ ಜೀವನಚರಿತ್ರೆ ಮತ್ತು ಆತ್ಮಚರಿತ್ರೆಗಳನ್ನು ಓದಿಕೊಳ್ಳುತ್ತಾರೆ.

CO 4: ವಚನ ಸಾಹಿತ್ಯದ ಸಮಕಾಲೀನತೆಯನ್ನು ಅರಿತು, ಮೈಗೂಡಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

ಘಟಕ – 1 ರಾಷ್ಟ್ರೀಯತೆ **14 ಗಂಟೆಗಳು**

1. ವಿಶ್ವಭಾರತಿಗೆ ಕನ್ನಡದಾರತಿ – ಚನ್ನವೀರ ಕಣವಿ
2. ಆಗಸ್ಟ್ ವೀರ – ಸಿಕಂದರ್ ಕಾಪು
3. ಈಗ ಎಂಥ ರಾಷ್ಟ್ರೀಯತೆ ಬೇಕು? – ವಸಂತ್ ಶೆಟ್ಟಿ

ಘಟಕ – 2 ಕೃಷಿ **14 ಗಂಟೆಗಳು**

1. ಉಳುವ ಒಕ್ಕಲು ಮಗನ ತಪ್ಪ ನೋಡದೆ ಒಪ್ಪಗೊಳ್ಳಯ್ಯ – ಒಕ್ಕಲಿಗ ಮುದ್ದಣ್ಣ
2. 'ಅವರ ಪೈಕಿ ನಾನೂ ಒಬ್ಬ' – ಅರ್ಚಕ ಬಿ ನಂಜುಂಡಸ್ವಾಮಿ
3. ಧನ್ವಂತರಿ ಚಿಕಿತ್ಸೆ – ಕುವೆಂಪು

ಘಟಕ – 3 ಕ್ರೀಡೆ **14 ಗಂಟೆಗಳು**

1. ನೆತ್ತಮನಾಡಿ ಭಾನುಮತಿ ಸೋಲ್ತೊಡೆ – ಪಂಪ
2. ಮೇರಿ ಕೋಮ್ ಸಂತತಿ ಸಾವಿರವಾಗಲಿ – ಗಿರಿಜಾಶಾಸ್ತ್ರಿ
3. ಹಿಟ್ಲರ್‌ಗೆ ಪಾಠ ಕಲಿಸಿದ ಕಪ್ಪು ಸುಂದರ – ಪಿ. ಲಂಕೇಶ್

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಬೆಟ್ಟದ ಮೇಲೊಂದು ಮನೆಯ ಮಾಡಿ – ಅಕ್ಕಮಹಾದೇವಿ
2. ತರವೆ ಬಿಡು ಪರಹಿಂಸೆ ದೋಷವು – ಕನಕದಾಸರು
3. ಕಂಗಾಲಾಗಿ ಕುಳಿತು – ಎಸ್. ತುಕಾರಾಂ

ಪಠ್ಯಪುಸ್ತಕ : ಕಲಾಗಂಗೋತ್ರಿ – 3

Course Articulation Matrix – 22KAN301

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	3	1	3	2	2	2	3
CO 2	3	3	3	2	3	3	3	3	2	2	2	3
CO 3	3	3	3	2	2	3	1	3	3	3	3	3
CO 4	3	3	3	2	2	3	3	3	3	2	3	3
Weighted Average	**3**	**3**	**3**	**2**	**2.75**	**3**	**2**	**3**	**2.5**	**2.75**	**2.5**	**3**

ಬಿ.ಎ.

ಸೆಮಿಸ್ಟರ್ –4

Course Code: 22KAN401	**Course Title:** ಕನ್ನಡಭಾಷೆ – 4
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: ಯಾವುದೇ ಕೆಲಸವನ್ನು ಪ್ರೀತಿಯಿಂದ ಮಾಡುವುದನ್ನು ಕಲಿಯುತ್ತಾರೆ.

CO 2: ಬಡತನದ ಧಾರುಣಸ್ಥಿತಿಯ ಪರಿಚಯವಾಗುವುದರಿಂದ, ಬಡಜನರ ಬಗ್ಗೆ ಅನುಕಂಪ ಮೂಡುತ್ತದೆ.

CO 3: ಕಾಲದ ಮಹತ್ವವನ್ನು ಅರಿತು, ಸಮಯದ ಸದುಪಯೋಗವನ್ನು ಪಡೆದುಕೊಳ್ಳುತ್ತಾರೆ.

CO 4: ಹಳಗನ್ನಡ ಕಾಲದ ಕವಿಗಳು ಮತ್ತು ಕಾವ್ಯಗಳನ್ನು ಓದುತ್ತಾರೆ.

ಘಟಕ – 1 ಕಾಯಕ **14 ಗಂಟೆಗಳು**

1. ಕಾಯಕಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ವಚನಗಳು – ಆಯ್ದ ವಚನಗಳು
2. ರಸ್ತೆ ನಕ್ಷತ್ರ ಕೃತಿಯ ಆಯ್ದ ಭಾಗ – ಟಿ.ಕೆ. ದಯಾನಂದ
3. ಮಹಿಳೆಯನು ಒಳಗೊಳ್ಳದೆ – ಕೆ.ಪಿ.ಸುರೇಶ

ಘಟಕ – 2 ಬಡತನ **14 ಗಂಟೆಗಳು**

1. ಕುಮಾರವ್ಯಾಸ ಭಾರತದ ಆಯ್ದ ಭಾಗ – ಕುಮಾರವ್ಯಾಸ
2. ಧನಿಯರ ಸತ್ಯನಾರಾಯಣ – ಕೊರಡ್ಕಲ್ ಶ್ರೀನಿವಾಸ ರಾವ್
3. ಬೂದಿಯಾಗದ ಕೆಂಡ ಕೃತಿಯ ಆಯ್ದ ಭಾಗ – ವಿಜಯಕುಮಾರ್ ಸಿಗರಹಳ್ಳಿ

ಘಟಕ – 3 ಕಾಲ **14 ಗಂಟೆಗಳು**

1. ದಡಿಗವೆಣಂಗಳನೆ ಮೆಟ್ಟಿ ಮೆಲ್ಲದೆ ನಡೆದಂ – ರನ್ನ
2. ಮಬ್ಬಿನಿಂದ ಮಬ್ಬಿಗೆ – ಜಿ.ಎಸ್.ಶಿವರುದ್ರಪ್ಪ
3. ಹಗಲು ಇರುಳುಗಳ ನಡುವೆ – ಕಾ.ತ. ಚಿಕ್ಕಣ್ಣ

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಮುನ್ನೀರ್ ಬೆನ್ನೀರೆನೆ ಬೆರೆಸಲಣ್ಣ ತಣ್ಣೀರೊಳವೆ – ನಾಗಚಂದ್ರ
2. ಒಲವಾದೊಡೆ ರೂಪಿನ ಕೋಟಲೆಯೇವುದೊ – ಜನ್ನ
3. ನಮ್ಮ ಸಂಸ್ಕೃತಿಯ ಹೆಮ್ಮೆ ಸಾಲದು – ಶಿವರಾಮ ಕಾರಂತ

ಪಠ್ಯಪುಸ್ತಕ : ಕಲಾಗಂಗೋತ್ರಿ – 4

Course Articulation Matrix - 22KAN401

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	3	3	3	3	2	2	3	3
CO 2	3	3	3	2	2	3	1	3	2	1	3	3
CO 3	3	3	3	2	2	3	-	3	1	2	2	3
CO 4	3	3	3	2	1	2	-	2	2	2	1	3
Weighted Average	**3**	**3**	**3**	**2**	**2**	**2.75**	**2**	**2.75**	**1.75**	**1.75**	**2.25**	**3**

ಬಿ.ಎಸ್ಸಿ

ಸೆಮಿಸ್ಟರ್–3

Course Code: 22KAN302	**Course Title:** ಕನ್ನಡಭಾಷೆ – 3
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: ಜೀವನದಲ್ಲಿ ಮಾನವೀಯ ಗುಣಗಳನ್ನು ಅಳವಡಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

CO 2: ಪ್ರವಾಸಕಥನಗಳನ್ನು ಓದುವುದರಿಂದ ಹಲವು ಪ್ರಾದೇಶಿಕ ವಿಶೇಷತೆಗಳನ್ನು ಗುರುತಿಸುತ್ತಾರೆ.

CO 3: ಶರಣರ ವೈಚಾರಿಕ ಪ್ರಜ್ಞೆ, ಸಮಾಜ ಸುಧಾರಕರ ವಿಚಾರ ಸಾಹಿತ್ಯವನ್ನು ಅವಲೋಕಿಸುತ್ತಾರೆ.

CO 4: ಆರೋಗ್ಯಯುತ ಜೀವನವನ್ನು ರೂಢಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

ಘಟಕ – 1 ಮಾನವೀಯತೆ **14 ಗಂಟೆಗಳು**

1. ಚಂದ್ರಹಾಸನ ಪ್ರಸಂಗ – ಲಕ್ಷ್ಮೀಶ
2. ನನ್ನ ನಾಯಿ – ಪು.ತಿ.ನ
3. ಪ್ರೇಮಭಿಕ್ಷು (ಕಾದಂಬರಿಯ ಆಯ್ದ ಭಾಗ) – ಪ್ರಭುಶಂಕರ

ಘಟಕ – 2 ಪ್ರವಾಸ **14 ಗಂಟೆಗಳು**

1. ಜೋಗದ ಗುಂಡಿ – ಮೂಗೂರು ಮಲ್ಲಪ್ಪ
2. ಮಹಾನ್ ಗೋಡೆ – ಶೂದ್ರ ಶ್ರೀನಿವಾಸ್
3. ಅನಫಿಲ್ಲಮ್ ಮತ್ತು ಕದಂಬ – ಬಿ.ಜಿ.ಎಲ್. ಸ್ವಾಮಿ

ಘಟಕ – 3 ವಿಚಾರ ಕ್ರಾಂತಿ **14 ಗಂಟೆಗಳು**

1. ಯಜಮಾನರಿಗೊಂದು ಪತ್ರ – ಎನ್.ಕೆ. ಹನುಮಂತಯ್ಯ
2. ಮೈಮೇಲೆ ದೆವ್ವ ಬರುವುದೇ – ಡಾ. ಸಿ.ಆರ್. ಚಂದ್ರಶೇಖರ್
3. ಮಿಂಚಿನ ಅಕ್ಷರ ಮಾಲೆ – ಮೊಗಳ್ಳಿ ಗಣೇಶ್

ಘಟಕ : 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಗಂಡಾಗಿ ಹುಟ್ಟಬೇಕಿತ್ತು – ಶ್ರೀದೇವಿ ಕೆರೆಮನೆ
2. ಕುಸಿಯುತ್ತಿರುವ ಸಾಂಸ್ಕೃತಿಕ ಮೌಲ್ಯಗಳು – ರಂಜಾನ್ ದರ್ಗಾ
3. ಹೃದಯ ದುರ್ಬಲವಾಗುತ್ತಿದೆಯೇ ? – ಡಾ. ಆರ್.ಕೆ. ಸರೋಜ

ಪಠ್ಯಪುಸ್ತಕ : ವಿಜ್ಞಾನಗಂಗೋತ್ರಿ – 3

Course Articulation Matrix - 22KAN302

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	2	3	2	3	2	2	2	3
CO 2	3	3	3	2	2	3	2	3	3	3	2	3
CO 3	3	3	3	2	1	3	2	2	2	2	2	2
CO 4	3	3	2	2	2	3	2	3	2	3	1	3
Weighted Average	**3**	**3**	**2.75**	**2.25**	**1.75**	**3**	**2**	**2.75**	**2.25**	**2.5**	**1.75**	**2.75**

ಬಿ.ಎಸ್ಸಿ

ಸೆಮಿಸ್ಟರ್–4

Course Code: 22KAN402	**Course Title:** ಕನ್ನಡಭಾಷೆ – 4
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: ದಮನಿತರ ಕುರಿತಾದ ಅಧ್ಯಯನವು ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಹೊಸ ಸಂಶೋಧನೆಗೆ ದಾರಿ ಮಾಡಿಕೊಡುತ್ತದೆ.

CO 2: ಸಾಮಾಜಿಕ ಸಹಿಷ್ಣುತಾ ಮನೋಭಾವವನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುವರು

CO 3: ಸಾಮಾನ್ಯ ಜನರ ಶ್ರಮಸಂಸ್ಕೃತಿಯ ಪರಿಚಯವಾಗಿ, ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಶ್ರಮಿಕವರ್ಗದ ಪರವಾದ ಕಾಳಜಿ ಹೆಚ್ಚುತ್ತದೆ.

CO 4: ತಂದೆ–ತಾಯಿಯನ್ನು ಗೌರವದಿಂದ ಕಾಣುವ ಮನೋಭಾವ ರೂಢಿಸಿಕೊಳ್ಳುವರು.

ಘಟಕ – 1 ದಮನಿತ ಲೋಕ **14 ಗಂಟೆಗಳು**

1. ಕುಲಂ ಕುಲಮಲ್ತು – ಪಂಪ
2. ಅಲ್ಲೇ ಕುಂತವರೆ – ಸಿದ್ಧಲಿಂಗಯ್ಯ
3. ಮಾರಿಕೊಂಡವರು – ದೇವನೂರು ಮಹಾದೇವ

ಘಟಕ – 2 ಸಹಿಷ್ಣುತೆ **14 ಗಂಟೆಗಳು**

1. ಭಿನ್ನ ಭೇದವ ಮಾಡಬ್ಯಾಡಿರೋ – ಅಜ್ಞಾತ ತತ್ವಪದಕಾರ
2. ಕುಲ ಕುಲ ಕುಲವೆಂದು – ಕನಕದಾಸ
2. ನಮ್ಮ ನೆರೆಯಲ್ಲಿ ದೀಪಾವಳಿ – ಫಕೀರ್ ಮಹಮ್ಮದ್ ಕಟ್ಪಾಡಿ

ಘಟಕ – 3 ಶ್ರೀಸಾಮಾನ್ಯನ ಬದುಕು **14 ಗಂಟೆಗಳು**

1. ಶ್ರೀ ಸಾಮಾನ್ಯನ ದೀಕ್ಷಾ ಗೀತೆ – ಕುವೆಂಪು
2. ಅಮ್ಮನ ಸೀರೆ – ಬಾನು ಮುಷ್ತಾಕ್
3. ಮುಖ – ಕೃಷ್ಣಮೂರ್ತಿ ಹನೂರು

ಘಟಕ : 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಅಮ್ಮನಾಗುವುದೆಂದರೆ – ರೂಪ ಹಾಸನ
2. ಸೂರ್ಯಕಾಂತಿಯ ಕನಸು – ಎಚ್ ಆರ್ ಸುಜಾತ
3. ಹದಿಹರೆಯದ ವಿದ್ಯಾರ್ಥಿಗಳ ಸ್ಥಿತಿ–ಗತಿಗಳು – ಡಾ. ಕೆ.ಆರ್. ಶ್ರೀಧರ್

ಪಠ್ಯಪುಸ್ತಕ : ವಿಜ್ಞಾನಗಂಗೋತ್ರಿ – 4

Course Articulation Matrix - 22KAN402

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	3	-	3	2	2	2	3
CO 2	3	3	2	2	2	3	2	3	2	2	1	3
CO 3	3	3	2	2	2	3	3	3	2	2	1	2
CO 4	3	3	3	2	2	3	3	3	2	2	2	3
Weighted Average	**3**	**3**	**2.5**	**2**	**2**	**3**	**2.66**	**3**	**2**	**2**	**1.5**	**2.75**

ಬಿ.ಕಾಂ.

ಸೆಮಿಸ್ಟರ್–3

Course Code: 22KAN303	**Course Title:** ಕನ್ನಡಭಾಷೆ – 3
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1: ಅತ್ಯಾಧುನಿಕ ತಂತ್ರಜ್ಞಾನದೊಂದಿಗೆ ಮನೋರಂಜನಾ ಮಾಧ್ಯಮದ ಮಹತ್ವವನ್ನು ಗುರುತಿಸುತ್ತಾರೆ

CO 2: ಲಾಭಕ್ಕಾಗಿ ಬದುಕುವುದನ್ನು ಬಿಟ್ಟು, ಮನುಷ್ಯ ಸಂಬಂಧಗಳಿಗಾಗಿ ಬದುಕುವುದನ್ನು ರೂಢಿಸಿಕೊಳ್ಳುವರು

CO 3: ಸಾಮಾಜಿಕ ಸಮಾನತೆ ಮತ್ತು ಸೌಹಾರ್ದಯುತ ಬದುಕನ್ನು ರೂಪಿಸಿಕೊಳ್ಳುವರು.

CO4: ಸಾಹಿತ್ಯದಲ್ಲಿ ಚರ್ಚಿತವಾದ ಪರಿಸರ, ತಂತ್ರಜ್ಞಾನ, ಜೀವನಚರಿತ್ರೆ, ಆತ್ಮಕತೆ, ಆಧುನಿಕತೆಯ ಪ್ರೇರಣೆ ಮತ್ತು ಪ್ರಭಾವಗಳನ್ನು ಗುರುತಿಸುತ್ತಾರೆ.

ಘಟಕ – 1 ಮನೋರಂಜನಾ ಮಾಧ್ಯಮ **14 ಗಂಟೆಗಳು**

1. ಕೌರವಸೇನೆ ಕೆಡೆದುದು ನಗೆಯ ಕಡಲೊಳಗೆ – ಕುಮಾರವ್ಯಾಸ
2. ಪೆದ್ದುಂಡೆ – ಪಿ.ಕೆ.ರಾಜಶೇಖರ
2. ಜೀವಕೇಂದ್ರಿತ – ಡಾ. ಚಕ್ಕೆರೆ ಶಿವಶಂಕರ

ಘಟಕ – 2 ಮಾರುಕಟ್ಟೆ **14 ಗಂಟೆಗಳು**

1. ಕೆಲಸವಿಲ್ಲದವರ ಹಾಡು – ದ.ರಾ. ಬೇಂದ್ರೆ
2. ಎಲ್ಲಾ ಮಾಯ – ಗೊಲ್ಲಹಳ್ಳಿ ಶಿವಶಂಕರ್
2. ಮೇದರಹಳ್ಳಿಯ ಅವಸಾನ – ಪೂ.ಚಂ.ತೇ

ಘಟಕ – 3 ಲಿಂಗಸಮಾನತೆ **14 ಗಂಟೆಗಳು**

1. ಆಯ್ದ ವಚನಗಳು –
2. ಬೆಂಕಿಮಳೆ – ಬಾನು ಮುಷ್ತಕ್
3. ಮನೆಕೆಲಸ – ಉಮಾರಾವ್

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಸಮಾಧಿಯ ಸತ್ವ – ಮಾಸ್ತಿ
2. ಅಳು – ಮನುಬಳಿಗಾರ್
3. ಹೈಟೆಕ್ ರಣವೈದ್ಯ – ನಾಗೇಶ್ ಹೆಗ್ಡೆ

ಪಠ್ಯಪುಸ್ತಕ : ವಾಣಿಜ್ಯಗಂಗೋತ್ರಿ – 3

Course Articulation Matrix - 22KAN303

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	3	3	-	3	2	3	3	3
CO 2	3	3	2	3	2	3	1	3	2	3	3	3
CO 3	3	3	2	3	1	3	1	3	3	3	3	3
CO 4	3	3	2	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**2.25**	**2.75**	**2.25**	**3**	**1.66**	**3**	**2.5**	**3**	**3**	**3**

ಬಿ.ಕಾಂ.

ಸೆಮಿಸ್ಟರ್–4

Course Code: 22KAN403	**Course Title:** ಕನ್ನಡಭಾಷೆ – 4
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1: ಭೂಮಿ ಮತ್ತು ಕಡಲಿನ ಮಹತ್ವವನ್ನು ಅರಿತು, ಕಾವ್ಯ ನಿರ್ಮಾಣದಲ್ಲಿ ತೊಡಗುತ್ತಾರೆ.

CO 2: ಸಹಬಾಳ್ವೆಯಿಂದ ಕೂಡಿದ ಬದುಕನ್ನು ರೂಢಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.

CO 3: ಆದರ್ಶ ಮತ್ತು ಮೌಲ್ಯಯುತ ಜೀವನವಿಧಾನವನ್ನು ಅನುಸರಿಸುತ್ತಾರೆ.

CO 4: ಕನ್ನಡ ಸಾಹಿತ್ಯದ ವಿವಿಧ ಪ್ರಕಾರಗಳನ್ನು ಓದುತ್ತಾರೆ.

ಘಟಕ – 1 ಕಡಲು **14 ಗಂಟೆಗಳು**

1. ಆಯ್ದ ಕಾವ್ಯಭಾಗಗಳು – ಪಂಪ, ಕುಮಾರವ್ಯಾಸ
2. ಸಾವಿನೆಡೆಗೆ ಸವಾರರು (ನಾಟಕ) – ಸಿಂಜ್.ಜೆ.ಎಂ (ಮೂಲ) ಬಸವರಾಜ್ ನಾಯ್ಕರ್ (ಅನುವಾದ)
2. ಪ್ರವಾಸ ಕಥನಗಳ ಆಯ್ದ ಭಾಗಗಳು – ಬಿ.ಜಿ.ಎಲ್ ಸ್ವಾಮಿ

ಘಟಕ – 2 ಸಹಬಾಳ್ವೆ **14 ಗಂಟೆಗಳು**

1. ಜನಪದ ತತ್ವಪದಗಳು – ಕೈವಾರ ತಾತಯ್ಯ
2. ಆಯ್ದ ಕೀರ್ತನೆ ಮತ್ತು ತ್ರಿಪದಿಗಳು – ಸರ್ವಜ್ಞ
3. ಸಹಬಾಳ್ವೆ, ಸಹಿಷ್ಣುತೆ ಒಂದು ವಿವೇಚನೆ – ವಿ. ಮುರಾರಿ

ಘಟಕ – 3 ಸಾವು **14 ಗಂಟೆಗಳು**

1. ತಿರುಕೊಳವಿನಾಚಿಯ ಪ್ರಸಂಗ – ಷಡಕ್ಷರ ದೇವ
2. ಚಂದ್ರಮತಿಯ ದುಃಖ – ರಾಘವಾಂಕ
2. ಸಾವು (ಲಲಿತ ಪ್ರಬಂಧ) – ವಿ. ಸೀತಾರಾಮಯ್ಯ

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ನಾಗವಲ್ಲಿ ಸ್ವಯಂವರನೆಂಬ ನಾಟ್ಯಶಾಸ್ತ್ರ – ಲಲಿತಾ ಸಿದ್ಧಬಸವಣ್ಣ
2. ಚಪ್ಪಲಿಗಳು – ಸಾ.ರಾ. ಅಬೂಬಕರ್
3. ನರಿಯಮಾತಂ ನಂಬಿ ಸತ್ತ ಬೆಳ್ಗತೆಯ ಕಥೆ – ದುರ್ಗಸಿಂಹ

ಪಠ್ಯಪುಸ್ತಕ : ವಾಣಿಜ್ಯಗಂಗೋತ್ರಿ – 4

Course Articulation Matrix – 22KAN403

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	2	3	3	3	2	1	-	3
CO 2	3	3	3	2	3	3	2	3	2	2	3	3
CO 3	3	3	3	2	2	3	2	3	2	2	1	3
CO 4	3	3	2	2	1	3	-	3	2	2	1	3
Weighted Average	**3**	**3**	**2.75**	**2.25**	**2**	**3**	**2.33**	**3**	**2**	**1.75**	**1.66**	**3**

ಸೆಮಿಸ್ಟರ್ – 3

Course Code: 22KAN304	**Course Title:** ಕನ್ನಡಭಾಷೆ – 3
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1: ಸಾಮಾಜಿಕ ಸಾಮರಸ್ಯವನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುವರು.
CO 2: ಮೌಢ್ಯತೆ ಬಿಟ್ಟು, ವೈಚಾರಿಕ ದೃಷ್ಟಿಕೋನ ಬೆಳೆಸಿಕೊಳ್ಳುತ್ತಾರೆ.
CO 3: ಸೃಜನಶೀಲ, ಕೌಶಲ್ಯಯುತ, ಸುಸಂಸ್ಕೃತ ಬದುಕನ್ನು ರೂಢಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.
CO 4: ಅಹಿಂಸೆ, ಭ್ರಾತೃತ್ವ, ಸಹಬಾಳ್ವೆಯನ್ನು ಕಲಿಯುತ್ತಾರೆ.

ಘಟಕ – 1 ಸಮಾಜ **14 ಗಂಟೆಗಳು**

1. ಮಾದಾರಾ ಚನ್ನಯ್ಯನ ರಗಳೆ – ಹರಿಹರ
2. ಪುರಂದರದಾಸರ ಕೀರ್ತನೆಗಳು – ಪುರಂದರದಾಸರು
3. ಔದಾರ್ಯಕ್ಕೆ ಕೊನೆಯಂತೆ – ತ.ಸು. ಶಾಮರಾವ್

ಘಟಕ – 2 ವೈಚಾರಿಕತೆ **14 ಗಂಟೆಗಳು**

1. ಧರೆಗೆ ಒಬ್ಬನೇ ದಾನಶೂರ ಕರ್ಣ – ಪಿ.ಕೆ. ರಾಜಶೇಖರ
2. ಅತಿಹಿತದಲಿ ನೀವಿಹಿದು – ಕನಕದಾಸರು
3. ಅಕ್ಕು – ವೈದೇಹಿ

ಘಟಕ – 3 ಜೀವನ ಮತ್ತು ಕಲೆ **14 ಗಂಟೆಗಳು**

1. ನಾಟಕ ರತ್ನ ಗುಬ್ಬಿವೀರಣ್ಣನವರ್ – ಅನಕೃ
2. ಪರಮಕಲೆ ಜೀವನದ ಲಲಿತ ಕಲೆ – ಡಿ.ವಿ. ಗುಂಡಪ್ಪ
3. ಡಾ. ರಾಜ್‌ಕುಮಾರ್ : ನಾಡಿನ ನುಡಿ – ದೊಡ್ಡಹುಲ್ಲೂರ ರುಕ್ಕೂಜಿ

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಪರಹಿಂಸೆಯ ಮಾಡಿ ಮಾನವಂ ಬಾಳ್ದಪನೇ – ಲಕ್ಷ್ಮೀಶ
2. ಕೋಪಪೈಸರಿಸಿತು ಹೃದಯ ತಂಪಾಯ್ತು – ರತ್ನಾಕರವರ್ಣಿ
3. ಶೂದ್ರತಪಸ್ವಿ ನಾಟಕದ ಭಾಗ (ದೃಶ್ಯ 2) – ಕುವೆಂಪು

ಪಠ್ಯಪುಸ್ತಕ : ನಿರ್ವಹಣಾಗಂಗೋತ್ರಿ – 3

Course Articulation Matrix - 22KAN304

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	3	2	3	3	3	2	3
CO 2	3	3	3	3	2	3	3	3	2	2	1	3
CO 3	3	3	3	3	3	3	-	3	2	2	3	3
CO 4	3	3	3	2	2	3	3	3	2	2	2	3
Weighted Average	**3**	**3**	**3**	**2.5**	**2.25**	**3**	**2.66**	**3**	**2.25**	**2.25**	**2**	**3**

ಸೆಮಿಸ್ಟರ್ – 4

Course Code: 22KAN404	**Course Title:** ಕನ್ನಡಭಾಷೆ – 4
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1: ಯುದ್ಧವಿರೋಧಿ ಮನೋಭಾವವನ್ನು ರೂಢಿಸಿಕೊಳ್ಳತ್ತಾರೆ.

CO 2: ದೇಶಪ್ರೇಮವನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುತ್ತಾರೆ.

CO 3: ನೆಮ್ಮದಿಯುತ ಬದುಕನ್ನು ರೂಢಿಸಿಕೊಳ್ಳುವರು.

CO 4: ವಿಜ್ಞಾನ, ಸಂಶೋಧನೆ, ತಂತ್ರಜ್ಞಾನದ ಅರಿವನ್ನು ಪಡೆಯುತ್ತಾರೆ.

ಘಟಕ – 1 ಯುದ್ಧ **14 ಗಂಟೆಗಳು**

1. ಪೊಕ್ಕನಭಿಮನ್ಯು ವಿರೋಧಿಬಳಾಂಬುರಾಶಿಯಂ – ಪಂಪ
2. 'ಶ್ಮಶಾನ ಕುರುಕ್ಷೇತ್ರಂ' (ಆಯ್ದಭಾಗ) – ಕುವೆಂಪು
3. ಅಣ್ವಸ್ತ್ರಯುದ್ಧ – ಜೆ. ಬಾಲಕೃಷ್ಣ

ಘಟಕ – 2 ರಾಷ್ಟ್ರೀಯತೆ **14 ಗಂಟೆಗಳು**

1. ಚೆನ್ನಿಗ ವೀರ ಮಹದೇವಪ್ಪ ಮೈಲಾರ ಸಾಹೇಬ – ರಾಣೆಬೆನ್ನೂರು ಸಮ್ಮದ್ ಸಾಹೇಬ
2. ಕಿತ್ತೂರ ಚೆನ್ನಮ್ಮ – ಜನಪದ ಕವಿ
3. ರಕ್ತಧ್ವಜ – ಬಸವರಾಜಕಟ್ಟಿಮನೆ

ಘಟಕ – 3 ಶಾಂತಿ **14 ಗಂಟೆಗಳು**

1. ಶ್ರೀ ಕೃಷ್ಣ ರಾಯಭಾರ ಪ್ರಸಂಗ – ಕುಮಾರವ್ಯಾಸ
2. ಗೋಲ್ಗೊಥಾ – ಎಂ. ಗೋವಿಂದಪೈ
3. ಶ್ವೇತಭವನದ ಮುಂದೆ – ನೇಮಿಚಂದ್ರ

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಮಗಳು ಕಂಡ ಕುವೆಂಪು (ಆಯ್ದಭಾಗ) – ತಾರಿಣಿ ಚಿದಾನಂದ
2. ಅಗ್ನಿರೇಖೆಗಳು – ಎ.ಪಿ.ಜೆ. ಅಬ್ದುಲ್ ಕಲಾಂ
3. ಸಾಲಾಯ ತಸ್ಮೈ ಸಮಃ – ಅ ರಾ ಮಿತ್ರ

ಪಠ್ಯಪುಸ್ತಕ : ನಿರ್ವಹಣಾಗಂಗೋತ್ರಿ – 4

Course Articulation Matrix - 22KAN404

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	3	3	3	2	3	-	3
CO 2	3	3	3	2	2	3	2	3	2	3	2	3
CO 3	3	3	3	3	3	3	-	3	2	3	1	3
CO 4	3	3	3	2	3	3	-	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**2.25**	**2.5**	**3**	**2.5**	**3**	**2.25**	**3**	**2**	**3**

ಸೆಮಿಸ್ಟರ್ – 3

Course Code: 22KAN305	**Course Title:** ಕನ್ನಡಭಾಷೆ – 3
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1: ದೈನಂದಿನ ಜೀವನದಲ್ಲಿ ಶಾಂತಿಯುತ ನೆಮ್ಮದಿಯ ಬದುಕನ್ನು ರೂಪಿಸಿಕೊಳ್ಳುವರು.
CO 2: ಸೌಹಾರ್ದಯುತ ಸಾಮಾಜಿಕ ಜೀವನ ವಿಧಾನವನ್ನು ರೂಢಿಸಿಕೊಳ್ಳುತ್ತಾರೆ.
CO 3: ಸ್ವಾತಂತ್ರ್ಯ ಪದದ ಅರ್ಥವ್ಯಾಪ್ತಿಯನ್ನು ಅರಿತು, ಸ್ವಾತಂತ್ರ್ಯದ ಆಶೋತ್ತರಗಳನ್ನು ಪಾಲಿಸುತ್ತಾರೆ.
CO 4: ಹಳಗನ್ನಡ ಮತ್ತು ನಡುಗನ್ನಡ ಕಾಲದ ಕವಿಗಳು ಮತ್ತು ಸಾಹಿತ್ಯವನ್ನು ಓದುವರು.

ಘಟಕ – 1 ದೈನಂದಿನ ಲಯ **14 ಗಂಟೆಗಳು**

1. ಜನಪದ ತ್ರಿಪದಿಗಳು – ಅಜ್ಞಾತ ಕವಿ
2. ರಾಮನ್ ಸತ್ತ ಸುದ್ದಿ – ಕೆ.ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್
2. ತಟ್ಟೆಯ ಕೊನೆ ಅಗುಳು – ಸುನಂದಾ ಕಡಮೆ

ಘಟಕ – 2 ಸೌಹಾರ್ದ **14 ಗಂಟೆಗಳು**

1. ರೊಟ್ಟಿ ಮತ್ತು ಕೋವಿ – ಸು.ರಂ. ಎಕ್ಕುಂಡಿ
2. ಎಲುಬಿನ ಹಂದರದೊಳಗೆ – ಮೂಡ್ನಾಕೂಡು ಚಿನ್ನಸ್ವಾಮಿ
2. ಭಾರತೀಯ ಸಮಾಜ, ಸಂಸ್ಕೃತಿ, ಮಹಿಳೆ – ಸಾ.ರಾ. ಅಬೂಬಕ್ಕರ್

ಘಟಕ – 3 ಸ್ವಾತಂತ್ರ್ಯ **14 ಗಂಟೆಗಳು**

1. ನಲವತ್ತೇಳರ ಸ್ವಾತಂತ್ರ್ಯ – ಸಿದ್ಧಲಿಂಗಯ್ಯ
2. ಮಾಡಿ ಮಡಿದವರು(ಕಾದಂಬರಿಯ ಆಯ್ದ ಭಾಗ) – ಬಸವರಾಜ ಕಟ್ಟೀಮನಿ
3. ಗಿರಿಜವ್ವನ ರೊಟ್ಟಿ – ಅನಕೃ

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಸಾರಥಿಯಾಗು ನಡೆ – ಕುಮಾರವ್ಯಾಸ
2. ಸೋಮೇಶ್ವರ ಶತಕ – ಸೋಮೇಶ್ವರ
3. ನಿಷಿದ್ಧ ಗಡಿಗಳ ದಾಟಿದ ಡಾ. ರುಕ್ಮಾಬಾಯಿ – ಡಾ. ಎಚ್.ಎಸ್. ಅನುಪಮ

ಪಠ್ಯಪುಸ್ತಕ : ಗಣಕಗಂಗೋತ್ರಿ – 3

Course Articulation Matrix - 22KAN305

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	3	3	3	1	1	1	3
CO 2	3	3	3	2	2	3	-	3	2	2	2	3
CO 3	3	3	3	2	3	3	3	3	2	3	3	3
CO 4	3	3	3	2	2	3	3	3	2	2	3	3
Weighted Average	**3**	**3**	**3**	**2**	**2.25**	**3**	**3**	**3**	**1.75**	**2**	**2.25**	**3**

ಬಿ.ಸಿ.ಎ.

ಸೆಮಿಸ್ಟರ್–4

Course Code: 22KAN405	**Course Title:** ಕನ್ನಡಭಾಷೆ – 4
Course Credits (L:T:P): 03 (2:1:0)	**Hours of Teaching/Week:** 02 (Theory) + 02 (Tutorials)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1: ಉತ್ತಮ ನಾಗರೀಕರಾಗಿ ತಮ್ಮ ಕರ್ತವ್ಯಗಳನ್ನು ಪಾಲಿಸುತ್ತಾರೆ.

CO 2: ಮನುಕುಲದ ಅಭಿವೃದ್ಧಿಗೆ ಒತ್ತು ನೀಡುವರು.

CO 3: ಕರುಣಾಮಯಿ ಗುಣವನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುವರು.

CO 4: ಕನ್ನಡ ಸಾಹಿತ್ಯದ ವಿವಿಧ ಪ್ರಕಾರಗಳ ಪರಿಚಯವಾಗುತ್ತದೆ.

ಘಟಕ– 1 ನಾಗರಿಕತೆ **14 ಗಂಟೆಗಳು**

1. ಇಟ್ಟಿಗೆಯ ಪಟ್ಟಣ – ಚಂದ್ರಶೇಖರ ಕಂಬಾರ
2. ಒಂದು ಸರೀ ಕಡ್ಡಿಗಾಗಿ – ಜಯಂತ್ ಕಾಯ್ಕಿಣಿ
3. ಸಂಸ್ಕೃತಿ ಮತ್ತು ನಾಗರಿಕತೆ – ಬಾನುಮುಷ್ತಾಕ್

ಘಟಕ – 2 ಅಭಿವೃದ್ಧಿ **14 ಗಂಟೆಗಳು**

1. ಪರದೆ ಸರಿದಂತೆ – ಡಿ.ಬಿ. ರಜಿಯಾ
2. ಡಾಂಬರು ಬಂದುದು – ದೇವನೂರು ಮಹಾದೇವ
3. ಲೂಟಿಯ ಹೆದ್ದಾರಿಗಳು – ನಾಗೇಶ ಹೆಗಡೆ

ಘಟಕ – 3 ಕರುಣೆ **14 ಗಂಟೆಗಳು**

1. ಶಿವಭೂತಿಯ ಕಥೆ – ಪಂಚತಂತ್ರ
2. ಕೊನೆಯ ಗಿರಾಕಿ – ನಿರಂಜನ
3. ಹಿಂಸೆಯ ಸ್ವರೂಪಗಳು ಬಲಿ–ಬಲಿದಾನ – ಮುರಾರಿ ಬಲ್ಲಾಳ

ಘಟಕ – 4 ಸಂಕೀರ್ಣ **14 ಗಂಟೆಗಳು**

1. ಬಾಹುಬಲಿಯ ವೈರಾಗ್ಯ – ಪಂಪ
2. ಚಾಪ್ಲಿನ್ – ಕುಂ. ವೀರಭದ್ರಪ್ಪ
3. ಚಿಗುರೊಡೆಯುತ್ತಿರುವ ಗಿಡದ ತನ್ಮಯತೆ – ಕ್ಷೀರಸಾಗರ

ಪಠ್ಯಪುಸ್ತಕ : ಗಣಕಗಂಗೋತ್ರಿ – 4

Course Articulation Matrix - 22KAN405

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	3	2	3	2	2	2	3
CO 2	3	3	3	2	2	3	3	3	2	2	1	3
CO 3	3	3	3	2	-	3	3	3	2	2	2	3
CO 4	3	3	3	2	1	3	3	3	2	2	1	3
Weighted Average	**3**	**3**	**3**	**2**	**1.66**	**3**	**2.75**	**3**	**2**	**2**	**1.5**	**3**

ಕನ್ನಡ ಮುಕ್ತ ಆಯ್ಕೆ (OE)

ಸೆಮಿಸ್ಟರ್ – 3

Course Code: 22OEKAN301	**Course Title:** ಆಧುನಿಕ ಪೂರ್ವ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಚಯ ಮತ್ತು ಪಠ್ಯ
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 03 (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1: ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರಾಚೀನತೆಯ ಪರಿಚಯವಾಗುತ್ತದೆ.

CO 2: ಪ್ರಾಚೀನ ಕನ್ನಡ ಕವಿಗಳ ಕಾವ್ಯಗಳನ್ನು ಓದುವನ್ನು ಕಲಿಯುತ್ತಾರೆ.

CO 3: ವಚನ ಸಾಹಿತ್ಯದ ಮಹತ್ವವನ್ನು ತಿಳಿಯುತ್ತಾರೆ.

CO 4: ಭಾಗವತ ಸಾಹಿತ್ಯದ ಮಹತ್ವವನ್ನು ತಿಳಿಯುತ್ತಾರೆ.

ಭಾಗ 1 – ಆಧುನಿಕ ಪೂರ್ವಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಚಯ

ಘಟಕ 1 – ಪೂರ್ವದ ಹಳಗನ್ನಡ : ಸಾಹಿತ್ಯ ಚರಿತ್ರೆಯ ಸ್ವರೂಪ , ಶಾಸನ ಸಾಹಿತ್ಯ, ಕವಿರಾಜಮಾರ್ಗ, ವಡ್ಡಾರಾಧನೆ **08 ಗಂಟೆಗಳು**

ಘಟಕ 2 – ಹಳಗನ್ನಡ : ಪಂಪ, ರನ್ನ, ಜನ್ನ, ನಾಗಚಂದ್ರ, ಆಂಡಯ್ಯ **07 ಗಂಟೆಗಳು**

ಘಟಕ 3 – ನಡುಗನ್ನಡ : ಜೇಡರ ದಾಸಿಮಯ್ಯ, ಬಸವಣ್ಣ, ಅಲ್ಲಮಪ್ರಭು, ಅಕ್ಕಮಹಾದೇವಿ, ಹರಿಹರ. **08 ಗಂಟೆಗಳು**

ಘಟಕ 4 – ಕುಮಾರವ್ಯಾಸ, ಲಕ್ಷ್ಮೀಶ, ರತ್ನಾಕರವರ್ಣಿ **07 ಗಂಟೆಗಳು**

ಭಾಗ 2: ಪಠ್ಯ

1. ಮೊಸಳೆಯಂ ಕಪಿ ವಂಚಿಸಿದ ಕಥೆ	– ದುರ್ಗಸಿಂಹ	**03 ಗಂಟೆಗಳು**
2. ನಿನ್ನ ಕುಲವಳಿದಲ್ಲದಳಿಯದು	– ರಾಘವಾಂಕ	**03 ಗಂಟೆಗಳು**
3. ಅ. ಪಾಪಿ ಬಲ್ಲನೆ ಪರರ ಸುಖದುಃಖವ	– ಪುರಂದರದಾಸ	**03 ಗಂಟೆಗಳು**
ಆ. ಸ್ನಾನವ ಮಾಡಿರೋ ಜ್ಞಾನತೀರ್ಥದಲ್ಲಿ	– ಕನಕದಾಸ	
4. ಗಂಡ ಹೆಂಡರ ಜಗಳ ಗಂಧ ತೀಡಿದ್ಯಾಂಗ	– ಸಂ. ಸೋಮಶೇಖರ ಇಮ್ರಾಪುರ	**03 ಗಂಟೆಗಳು**

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು

1. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ : ರಂ.ಶ್ರೀ ಮುಗಳಿ
2. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ ಸಂಪುಟಗಳು : ಕನ್ನಡ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ ಪ್ರಕಟಣೆ
3. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಸಮಗ್ರ ಚರಿತ್ರೆ ಸಂಪುಟಗಳು : ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ
4. ಸಾಮಾನ್ಯನಿಗೆ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ ಸಂಪುಟಗಳು : ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ
5. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ : ಕೆ. ವೆಂಕಟರಾಮಪ್ಪ
6. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ : ತ.ಸು.ಶಾಮರಾಯ

Course Articulation Matrix - 22OEKAN301

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	3	3	2	3	3	3	3	3	2
CO 2	3	3	3	2	2	3	3	2	2	2	3	2
CO 3	3	1	1	2	2	1	1	2	1	1	1	2
CO 4	3	2	1	2	1	1	1	2	1	2	1	2
Weighted Average	**3**	**2.25**	**1.75**	**2.25**	**2**	**2**	**2**	**2.25**	**1.75**	**2**	**2**	**2**

ಕನ್ನಡ ಮುಕ್ತ ಆಯ್ಕೆ (OE)

ಸೆಮಿಸ್ಟರ್ – 4

Course Code: 22OEKAN401	**Course Title:** ಆಧುನಿಕ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಚಯ ಮತ್ತು ಪಠ್ಯ
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 03(Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester End Examination Marks:** 60

Course Outcomes

CO 1: ಆಧುನಿಕ ಕನ್ನಡ ಸಾಹಿತ್ಯದಲ್ಲಿ ನವೋದಯ ಸಾಹಿತ್ಯದ ವಿಶಿಷ್ಟತೆಯನ್ನು ಅರಿಯುವರು.
CO 2: ಆಧುನಿಕ ಕನ್ನಡ ಸಾಹಿತ್ಯದಲ್ಲಿ ಪ್ರಗತಿಶೀಲ ಮತ್ತು ನವ್ಯ ಸಾಹಿತ್ಯದ ಪ್ರಭಾವದ ಪರಿಚಯವಾಗುತ್ತದೆ.
CO 3: ಕನ್ನಡ ದಲಿತ ಬಂಡಾಯ ಸಾಹಿತ್ಯದ ಧೋರಣೆಗಳನ್ನು ತಿಳಿದುಕೊಳ್ಳುವರು.
CO 4: ಕನ್ನಡ ಮಹಿಳಾ ಸಾಹಿತ್ಯದ ಮಹತ್ವವನ್ನು ಅರಿಯುತ್ತಾರೆ.

ಭಾಗ 1 : ಆಧುನಿಕ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಚಯ

ಘಟಕ 1 ಅ. – ನವೋದಯಪೂರ್ವ ಸಾಹಿತ್ಯ : (1870 – 1920) ಮುದ್ದಣ, ಆರಂಭಿಕ ಅನುವಾದ ಸಾಹಿತ್ಯದ ಸಂಕ್ಷಿಪ್ತ ಪರಿಚಯ (ಚುರಮುರಿ ಶೇಷಗಿರಿರಾಯರು, ಬಸಪ್ಪಶಾಸ್ತ್ರಿ, ಬಿ.ವೆಂಕಟಾಚಾರ್ಯ, ಎಂ.ಎಲ್. ಶ್ರೀಕಂಠೇಶಗೌಡ, ಎಸ್.ಜೆ. ನರಸಿಂಹಾಚಾರ್ಯ) ಪಂಜೆ ಮಂಗೇಶರಾವ್, ಗೋವಿಂದ ಪೈ.

ಆ. – ನವೋದಯ ಸಾಹಿತ್ಯ : ಪ್ರೇರಣೆ ಮತ್ತು ಹಿನ್ನೆಲೆ,
ಬಿ.ಎಂ.ಶ್ರೀ., ದ.ರಾ. ಬೇಂದ್ರೆ, ಕುವೆಂಪು, ಮಾಸ್ತಿ ವೆಂಕಟೇಶ ಐಯ್ಯಂಗಾರ್, ಶಿವರಾಮ ಕಾರಂತ, ಟಿ.ಪಿ. ಕೈಲಾಸಂ, ಶ್ರೀರಂಗ. **07 ಗಂಟೆಗಳು**

ಘಟಕ 2 – ಪ್ರಗತಿಶೀಲ ಮತ್ತು ನವ್ಯ ಸಾಹಿತ್ಯ : ಪ್ರೇರಣೆ ಮತ್ತು ಹಿನ್ನೆಲೆ **07 ಗಂಟೆಗಳು**
ಪ್ರಗತಿಶೀಲ ಸಾಹಿತ್ಯ : ಅ.ನ. ಕೃಷ್ಣರಾಯ, ಚದುರಂಗ
ನವ್ಯ ಸಾಹಿತ್ಯ : ವಿ.ಕೃ. ಗೋಕಾಕ್, ಗೋಪಾಲ ಕೃಷ್ಣ ಅಡಿಗ, ಯಶವಂತ ಚಿತ್ತಾಲ, ಯು.ಆರ್. ಅನಂತಮೂರ್ತಿ, ಗಿರೀಶ್ ಕಾರ್ನಾಡ, ಚಂದ್ರಶೇಖರ ಕಂಬಾರ

ಘಟಕ 3 – ದಲಿತ ಮತ್ತು ಬಂಡಾಯ ಸಾಹಿತ್ಯ : ಪ್ರೇರಣೆ ಮತ್ತು ಹಿನ್ನೆಲೆ. **08 ಗಂಟೆಗಳು**
ಸಿದ್ದಲಿಂಗಯ್ಯ, ಬರಗೂರು ರಾಮಚಂದ್ರಪ್ಪ, ದೇವನೂರು ಮಹಾದೇವ.

ಘಟಕ 4 – ಮಹಿಳಾ ಸಾಹಿತ್ಯ : ಪ್ರೇರಣೆ ಮತ್ತು ಹಿನ್ನೆಲೆ **07 ಗಂಟೆಗಳು**
ನಂಜನಗೂಡು ತಿರುಮಲಾಂಬ, ಗೀತಾನಾಗಭೂಷಣ, ವೈದೇಹಿ, ಸಾರಾ ಅಬೂಬಕರ್

ಭಾಗ 2 : ಪಠ್ಯ

1. ಅ. ನೆರಳು – ಪುತಿನ
   ಆ. ಸಂಕಲ್ಪ ಗೀತೆ – ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ **04 ಗಂಟೆಗಳು**
2. ರಂಗವ್ಯ, ಭರ್ಮಣ್ಯನ ವಿರಸ : ಕರಿಯನಿಗೆ ಕೆಲಸ
(ಪಿ. ಲಂಕೇಶ್ ಅವರ 'ಮುಸ್ಸಂಜೆಯಕಥಾ ಪ್ರಸಂಗ'ದಿಂದ ಆಯ್ದ ಭಾಗ) **03 ಗಂಟೆಗಳು**
3. ಹೋಗಿಯೇ ಬಿಟ್ಟಿದ್ದ ! – ಕೊಡಗಿನ ಗೌರಮ್ಮ **03 ಗಂಟೆಗಳು**
4. ಮಾರ್ವೆಲಸ್ ಐಡಿಯಾ – ಕೆ.ಪಿ. ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ **03 ಗಂಟೆಗಳು**

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು

1. ಹೊಸಗನ್ನಡ ಕವಿತೆಯ ಮೇಲೆ ಇಂಗ್ಲಿಷ್ ಕಾವ್ಯದ ಪ್ರಭಾವ : ಎಸ್. ಅನಂತನಾರಾಯಣ
2. ಸಂಕ್ಷಿಪ್ತ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ : ಎಂ.ಮರಿಯಪ್ಪ ಭಟ್ಟ
3. ಯುಗಧರ್ಮ ಹಾಗೂ ಸಾಹಿತ್ಯ ದರ್ಶನ : ಕೀರ್ತಿನಾಥ ಕುರ್ತಕೋಟಿ
4. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಸಂಗಾತಿ : ಕೀರ್ತಿನಾಥ ಕುರ್ತಕೋಟಿ
5. ಹೊಸಗನ್ನಡದ ಅರುಣೋದಯ : ಶ್ರೀನಿವಾಸ ಹಾವನೂರ
6. ಸಾಲುದೀಪಗಳು : ಕರ್ನಾಟಕ ಸಾಹಿತ್ಯ ಕಾಡಮಿ
7. ಹೊಸಗನ್ನಡದ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ : ಎಲ್.ಎಸ್.ಶೇಷಗಿರಿರಾವ್
8. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ ಚಾರಿತ್ರಿಕ ಬೆಳವಣಿಗೆ : ಸಿ.ವೀರಣ್ಣ
9. ಮಹಿಳಾ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ : ಹೆಚ್.ಎಸ್.ಶ್ರೀಮತಿ
10. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಮೀಮಾಂಸೆ : ರಹಮತ್ ತರೀಕೆರೆ
11. ವಚನ ಚಿಂತನ ಮಾಲೆ ಸಂಪುಟಗಳು : ಬರಗೂರು ರಾಮಚಂದ್ರಪ್ಪ
12. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಕೋಶ : ರಾಜಪ್ಪ ದಳವಾಯಿ
13. ಕನ್ನಡ ರಾಷ್ಟ್ರೀಯತೆ : ಬಂಜಗೆರೆ ಜಯಪ್ರಕಾಶ
14. ಕರ್ನಾಟಕ ಸಮಗ್ರ ತತ್ವಪದಗಳ ಸಂಪುಟಗಳು : ಪ್ರ. ಸಂ. ಕಾ. ತ. ಚಿಕ್ಕಣ್ಣ

Course Articulation Matrix - 22OEKAN401

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	3	2	3	3	3	2	2	2
CO 2	3	2	3	2	3	3	3	3	2	3	3	2
CO 3	3	2	1	2	1	2	1	2	1	2	1	2
CO 4	3	2	2	2	2	1	2	1	2	1	2	2
Weighted Average	**3**	**2.25**	**2.25**	**2**	**2.25**	**2**	**2.25**	**3**	**2**	**2**	**2**	**2**

ನಿರಂತರ ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ ಮತ್ತು ಸೆಮಿಸ್ಟರ್ ಅಂತಿಮ ಪರೀಕ್ಷೆಗೆ ಸೂಚಿಸುವ ಮಾರ್ಗಸೂಚಿಗಳು

ಪ್ರತಿ ಪತ್ರಿಕೆಯ ಒಟ್ಟು ಪಾಠ ಘಟಕಗಳು – 04 ಘಟಕಗಳು

(ಪ್ರಾಥಮಿಕ ಪರಿಚಯ, ಸೈದ್ಧಾಂತಿಕ ವಿವರಣೆ ಸೇರಿದಂತೆ)

ಗಮನಿಸಿ : ಪರೀಕ್ಷೆಯ ಅಂಕಗಳು (ಬರವಣಿಗೆ) : 60 ಅಂಕಗಳು
ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನ : 40 ಅಂಕಗಳು
———————
ಪ್ರತಿ ಪತ್ರಿಕೆಗೆ ಗರಿಷ್ಠ ಅಂಕಗಳು : 100 ಅಂಕಗಳು
———————

ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನದ ವಿವರಗಳು :

ಎಲ್ಲಾ ಸೆಮಿಸ್ಟರ್‌ಗಳಿಗೆ ಪ್ರತಿ ಪತ್ರಿಕೆಗೆ ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನವನ್ನು ಈ ಕೆಳಗಿನಂತೆ ಮಾಡಲಾಗುತ್ತದೆ

ಪರೀಕ್ಷೆ	ವಿವರ	ಅಂಕಗಳು
C-1	ಪ್ರತಿ ಸೆಮಿಸ್ಟರ್‌ನ ಪೂರ್ವಾರ್ಧದ ಕೊನೆಗೆ 7–8ನೇ ವಾರಗಳಲ್ಲಿ ಕಿರುಪರೀಕ್ಷೆ	20
C-2	ನಿಯೋಜಿತ ಪ್ರಬಂಧ ಡ	20
	ಒಟ್ಟು ಅಂಕಗಳು ್ಯಾ	40
C-3	ಪ್ರತಿ ಸೆಮಿಸ್ಟರ್‌ನ ಅಂತಿಮ ಪರೀಕ್ಷೆ ಸಮಯ 2 1/2 ಗಂಟೆಗಳು 60 ಅಂಕಗಳು	60
	ಒಟ್ಟು ಅಂಕಗಳು	**100**

ಹೊಸ ಶಿಕ್ಷಣ ನೀತಿ 2021-22

ಮಾದರಿ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ – ಮೂರನೇ ಮತ್ತು ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್

(AECC & OE)

ಅವಧಿ : $2\frac{1}{2}$ Hours **ಅಂಕಗಳು : 60**

1. ಒಂದು ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಿ. 1 x 10 = 10

   (ಘಟಕ 1 ರಿಂದ 2 ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

2. ಒಂದು ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಿ. 1 x 10 = 10

   (ಘಟಕ 2 ರಿಂದ 2 ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

3. ಒಂದು ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಿ 1 x 10 = 10

   (ಘಟಕ 3 ರಿಂದ 2 ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

4. ಒಂದು ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಿ. 1 x 10 = 10

   (ಘಟಕ 4 ರಿಂದ 2 ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

5. ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. 2 x 5 = 10

   (ಘಟಕ 1, 2, 3, 4 ರಿಂದ ಪದ್ಯ ಅಥವಾ ಪಾಠದಿಂದ ನಾಲ್ಕು
   ಸಂದರ್ಭ ವಾಕ್ಯಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

6. ಒಂದು ವಿಷಯ ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. 1 x 5 = 5

   (ನಾಲ್ಕು ಘಟಕಗಳ ಪಠ್ಯದಲ್ಲಿನ ಒಂದು ವಿಷಯ ಕುರಿತು ವಿದ್ಯಾರ್ಥಿಗಳ ಸ್ವಂತ ಅನುಭವ, ಆಲೋಚನೆ, ಅಭಿಪ್ರಾಯ ಕುರಿತು ಬರೆಯಲು ಎರಡು ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

7. ಒಂದು ಪದ ಅಥವಾ ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿ. 5 x 1 = 5

   (ನಾಲ್ಕು ಘಟಕಗಳಲ್ಲಿ ಭಾಷಾಭ್ಯಾಸಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಐದು ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ)

DEPARTMENT OF
LAW AND CONSTITUTION OF INDIA

Motto

RIGHTS AND DUTIES

Vision

WELFARE IN DIFFERENT FIELDS OF LIFE

Mission

Facilitating greatest happiness of greatest members.

Intense participation.

Enhance prestige and image of the country.

Program Outcome (PO) Attributes

PO 1: Domain Knowledge

PO 2: Problem Analysis

PO 3: Design and Development of Solutions

PO 4: Investigation & Research

PO 5: Use of Modern Techniques/Tools

PO 6: Domain and Society

PO 7: Environment and Sustainability

PO 8: Moral and Ethical Values

PO 9: Individual and Team Work

PO 10: Communication

PO 11: Project Management and Finance

PO 12: Life-long Learning

List of BoS Members

Sl. No.	Category	Member Details
1	Chairperson	Divya S, HoD SBRR Mahajana First Grade College(A), Jayalakshmipuram, Mysuru divyasrijith14@gmail.com 9008926746
2	Nominee by the Vice Chancellor	Dr. Maruthi T R Assistant Professor Dept of studies and research in law, Manasagangothri, Mysuru mmaruthi_smg@yahoo.co.in 9986191962
3	Two Experts from Other University/ Institutions	Dr. Janhavi S S Assistant Professor & Special Officer to PhD Exam Section DoS & Research in Political Science, Karnataka State Open University, Mysuru. janhaviksou@gmail.com 9449806664
4		Vani C, Assistant Professor, Sarada Vilas Law College, Krishnamurthypuram, Mysuru vaniashith23@gmail.com 9900295889

Course Structure (NEP)

ABILITY ENHANCEMENT COMPULSORY COURSES (AECC)

II Year

Course Type, Code and Title		Hours/ Week		L:T:P (Credits)	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P		C1	C2	C3		
Constitution of India – III/IV Sem									
AECC(2)	Constitution of India **BA:** 221423 **BSc:** 2123232 **BCom:** 223323 **BBA:** 224323 **BCA:** 225423 **BBA(H&H):** 226323 **BBA(Aviation):** 227323	2	0	2:0:0 (2 Credits)	10	10	30	1 Hour	50

AECC(2) Syllabus for All Programs

Semester III/IV

Course Code: (Available in Course Structure)	**Course Title:** AECC(1) Constitution of India
Course Credits (L:T:P): 02 (2:0:0)	**Hours of Teaching/Week:** 02 Hours
Total Contact Hours: 28 Hours	**Formative Assessment Marks:** 20
Exam Duration: 1 Hour	**Semester End Examination Marks:** 30

Course Outcomes (COs):

CO 1: Acquire knowledge on Indian Constitution, Preamble and Salient features of Indian Constitution and Fundamental Duties & Rights of an Indian Citizen. Also, inculcate the habit of practicing the same.

CO 2: Identify the Powers and Functions of Union Government (Indian), State Government (Indian) and its members.

CO 3: Analyze and implement roles and responsibility of the Indian Judiciary System and the Indian Election Commission.

Course Content

Content	Hours
UNIT - 1	
Chapter-1: Making Indian Constitution, Constituent Assembly – Composition, Objectives, Preamble and Salient features of the Indian Constitution. **Chapter-2:** Fundamental Rights, Fundamental Duties, Directive Principles.	
UNIT – 2	
Chapter-3: Union Government, President, Prime Minister and Cabinet. **Chapter-4:** State Government, Governor, Chief Minister and Cabinet.	
UNIT - 3	
Chapter-5: Judiciary, Supreme Court and High Court : Composition, Powers and Functions. **Chapter-6:** Electoral Process, Election Commission, Composition, Powers and Functions, Electoral Reforms.	

Text Books:

1. Durga Das Basu, Introduction to the Constitution of India, Gurgaon: LexisNexis, (23rdedn.) 2018.
2. M.V.Pylee, India's Constitution, New Delhi; S.Chand Pub., (16thedn.) 2017.
3. J.N.Pandey, The Constitutiona Law of India, Allahabad; Central Law Agency (55thEdn.) 208.

References:

1. Constitution of India (Full Text) India.gov.in., National Portal of India, https://www.india.gov.in/sites/upload_files/npi/files/coi_part_full.pdf.
2. K.B.Merunandan, BharatadaSamvidhanaOnduParichaya, Bngalore, Meragu Publications, 2015.
3. K. Sharma, Introduction to the Constitution of India, Prentice Hall of India, New Delhi, 2002,.
4. P.M.Bakshi, Constitution of India, Universal Law Publishing House, New Delhi, 999.
5. D.C.Gupta, Indian Government and Polticis, Vikas publishing House, New Delhi, 1975
6. S.N.Jha, Indian Political System; Historical Developments, Ganga Kavery Publishing House, Varanasi, 2005.
7. Arorand Mukherji, Federalism in India, Origin and Development, Vika Publishing House, New Delhi, 1992.

Course Articulation Matrix – AECC(2): All Programs

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	3	3	2	3	3	3	3	1
CO 2	2	3	1	3	3	2	3	3	3	2	2	3
CO 3	3	1	1	3	3	2	2	3	3	1	3	3
Weighted Average	**2.33**	**2**	**1**	**2.33**	**3**	**2.33**	**2.33**	**3**	**3**	**2**	**2.66**	**2.33**

EVALUATION/ASSESSMENT PATTERN (AECC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively.

	THEORY
Total Marks	50 Marks
Continuous Assessment – 1 (C1)	10 Marks
Continuous Assessment – 2 (C2)	10 Marks
Semester End Examination (C3)	30 Marks

AECC (Constitution of India) Theory Question Paper Pattern

Max. Marks: 30 Marks **Exam Duration:** 1 Hour

PART – A

All questions are compulsory. Each Question carries 1 Mark. 10Q X 1M = 10 Marks

1.
2.
3.
.
.
10.

PART – B

Answer any TWO Questions. Each Main carries 5 Marks. 2Q X 5M = 10 Marks

Answer the following in not more than 3-5 sentences.

11.
12.
13.

Answer any ONE Question. Question carries 10 Marks. 1Q X 10M = 10 Marks

Answer the following in not more than 500 words.

14.
15.

APPROVED BY THE FOLLOWING BoS MEMBERS

Mahajana Education Society (R)
Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

UG Board of Studies

Approved by The University of Mysore, Governing Council & Academic Council for the Academic Session: 2022-2023

Department of Law and Constitution of India

SL.NO	NAME AND ADDRESS	DESIGNATION	SIGNATURE
1.	Divya S, HoD Department of Law & Constitution of India SBRR Mahajana First Grade College, Jayalakshmipuram, Mysuru divyasrijith14@gmail.com 9008926746	Chairman	
2.	Dr. Maruthi T R ~~Assistant~~ Professor Vice Chancellor Nominee Dept of studies and research in law, Manasagangothri, Mysuru mmaruthi_smg@yahoo.co.in 9986191962, 6366189651	Member	
3.	Dr. Janhavi S S Assistant Professor &Spl. Officer to PhD Exam Section DoS& Research in Political Science Karnataka State Open University Mysuru. janhaviksou@gmail.com 9449806664	Member	
4.	Vani C, Assistant Professor Sarada Vilas Law College Krishnamurthypuram Mysuru vaniashith23@gmail.com Mob: 9900295889	Member	

Chairperson
BOS/BOE in Law & Constitution of India
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru-570 012

Constitution of India NEP CBCS Syllabus 2022-23

Mahajana Education Society (R.)
Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE
(Autonomous)

Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF MATHEMATICS

UG ☑

PG ☐

NEP Syllabi for I and II Semester B.Sc. MATHEMATICS

2021-22

DEPARTMENT OF MATHEMATICS

Motto

Accuracy and Perfection

Vision

To Create a Mindset to apply Analytical Skills

Mission

Empower with Logic Enhance with Skills

Program Outcomes (POs) for Bachelor of Science

PO 1 **: Domain Knowledge -** Acquire and apply knowledge of science in relevant areas.

PO 2 **: Problem Analysis –** Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3 **: Design and Development of Solutions –** Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4 **: Investigation & Research** – Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5 **: Use of Modern Techniques/Tools** – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO 6 **: Impact of Science on Society** – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO 7 **: Environment and Sustainability** – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO 8 **: Moral and Ethical Values** – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO 9 **: Individual and Team Work with Time Management** – Work productively in a team or as an individual while exhibiting time management skills.

PO 10 **: Communication** – Develop the caliber to convey various concepts of science effectively.

PO 11 **: Project Management and Finance** – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12 **: Life-long Learning** – Engage in the art of self-directed learning.

List of BoS Members

Sl. No.	Category	Name & Designation	Address for Communication	e-Mail & Mobile No.
1	Chairperson	Dr. Sumathi M P Assistant Professor & HoD	Department of Mathematics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	sumathimp.fgc@mahajana.edu.in 9880810618
2	Member	Sri. Niranjan L Assistant Professor	Department of Mathematics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	niranjankavi.np@gmail.com 9108257072
3	Two Experts from Other University	Dr M C Mahesh Kumar Associate Professor	Department of Mathematics GFGC, KR Puram, Bangalore-36	Softmahe15@gmail.com 9844753730
4		Kemparaju R Assistant Professor	Department of Mathematics Government college for women, Chintamani-563125	kemps007@gmail.com 9844335388
5	Nominee by the Vice Chancellor	Dr.D D Somashekara Professor	DoS in Mathematics Manasagangotri, University of Mysore, Mysuru – 570006	somashekara@maths.uni-mysore.ac.in 9480057505
6	Alumnus	Harshavardhana C N Assistant Professor	Department of Mathematics Govt First Grade college for Women, Holenarasipura	cnhmaths@gmail.com 8971876885

Course Structure(NEP)

Discipline Specific Courses (DSC) and Open Elective (OE)

I Year

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/ P	L:T:P	C1	C2	C3		
MATHEMATICS – I Sem									
DSC(1)	Algebra - I & Calculus – I **212139**	**4**	**0**	**4:0:2 (6credits)**	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(1)-Lab	Theory based Practical's on Algebra - I and Calculus – I **212139**	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
OE(1)	Optional Mathematics – I **21OEMAT101**	**3**	**0**	**3:0:0**	**20**	**20**	**60**	**2 ½ Hours**	**100**
	Business Mathematics – I **21OEMAT102**								
	Mathematical Aptitude- I **21OEMAT103**								
	(Any one OE course to be opted)								

MATHEMATICS – II Sem									
DSC(2)	Algebra – II (Number Theory) and Calculus – II **212239**	**4**	**0**	**4:0:2** (6 credits)	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(2) Lab	Theory based Practical's on Algebra – II (Number Theory) and Calculus – II **212239**	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
OE(2)	Optional Mathematics – II **21OEMAT201**	**3**	**0**	**3:0:0**	**20**	**20**	**60**	**2 ½ Hours**	**100**
	Business Mathematics – II **21OEMAT202**								
	Mathematical Aptitude- II **21OEMAT203**								
	(Any one OE course to be opted)								

DSC(1) Syllabus for B.Sc. Mathematics (Basic and Honors)

Semester I

Course Code: 212139	**Course Title:** DSC(1) : Algebra - I & Calculus - I DSC(1) Lab :Theory based Practical's on Algebra - I and Calculus – I
Course Credits:06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 : Design solutions and implement the elementary operation for matrices and system of linear equations.

CO2 : Examine and develop solution for polynomial equations using various methods.

CO 3 : Evaluation of Polar co-ordinates applying methods of differential calculus.

CO4 : Implementation of various technique of integration and differentiation for functions with real variables and to evaluate Reduction formulae.

Course Content

Content	Hours
UNIT – 1	
Matrix: Recapitulation of Symmetric and Skew Symmetric matrices, Algebra of Matrices; Row and column reduction to Echelon form. Rank of a matrix; Inverse of a matrix by elementary operations; Solution of system of linear equations; Criteria for existence of non-trivial solutions of homogeneous system of linear equations. Solution of non-homogeneous system of linear equations. Cayley- Hamilton theorem, inverse of matrices by Cayley-Hamilton theorem (Without Proof).	**14**

UNIT – 2	
Theory of equations : Euclid's algorithm, Polynomials with integral coefficients, Remainder theorem, Factor theorem, Fundamental theorem of algebra(statement only), Irrational and complex roots occurring in conjugate pairs, Relation between roots and coefficients of a polynomial equation, Symmetric functions, Transformation, Reciprocal equations, Descartes' rule of signs, Multiple roots, Solving cubic equations by Cardon's method, Solving quartic equations by Descarte's Method.	**14**
UNIT – 3	
Polar Co-ordinates : Polar coordinates, angle between the radius vector and tangent. Angle of intersection of two curves (polar forms), length of perpendicular from pole to the tangent, pedal equations. Derivative of an arc in Cartesian, parametric and polar forms, curvature of plane curve-radius of curvature formula in Cartesian, parametric and polar and pedal forms- center of curvature, circle of curvature.	**14**
UNIT – 4	
Successive Differentiation and Integral Calculus-I : nth Derivatives of Standard functions e^{ax+b} , a^x, $(ax+b)^n$, $\sin(ax+b)$, $\cos(ax+b)$, $\log(ax+b)$, $e^{ax}\sin(bx+c)$, $e^{ax}\cos(bx+c)$, Leibnitz theorem and its applications. Recapitulation of definite integrals and its properties. Reduction formulae for $\int \sin^n x\,dx$, $\int \cos^n x\,dx$, $\int \sin^n x \cos^m x\,dx$, $\int \tan^n x\,dx$, $\int \cot^n x\,dx$, $\int \sec^n x\,dx$, $\int \operatorname{cosec}^n x\,dx$, $\int x^n \sin x\,dx$, , $\int x^n \cos x\,dx$, , $\int x^n e^{ax}\,dx$ with definite limits	**14**

Books for References:

1. University Algebra - N.S. Gopala Krishnan, New Age International (P) Limited.
2. Algebra – Natarajan, Manicavasagam Pillay and Ganapathy.
3. Theory of Matrices - B S Vatsa, New Age International Publishers.
4. Matrices - A R Vasista, Krishna Prakashana Mandir.
5. Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi.
6. Applications of Calculus, Debasish Sengupta, Books and Allied (P) Ltd., 2019.
7. Calculus – Lipman Bers, Holt, Rinehart & Winston.
8. Calculus - S Narayanan & T. K. Manicavachogam Pillay, S. Viswanathan Pvt. Ltd.,vol. I & II.
9. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw.
10. Shanthinarayan – Integral Calculus, New Delhi: S. Chand and Co. Pvt. Ltd.
11. Shanthinarayan and P K Mittal, Integral Calculus, Reprint. New Delhi: S.Chand and Co. Pvt. Ltd., 2013.

Mathematics Web links:

1. http://scienceworld.wolfram.com/biography/topics/Mathematicians.html
2. http://teachers.sduhsd.k12.ca.us/abrown/index2.html
3. http://www.maths.tcd.ie/pub/HistMath/People/RBallHist.html
4. http://www.geometry.net/math.html
5. http://www-history.mcs.st-andrews.ac.uk/history/Indexes/Full_Alph.html
6. http://mathforum.org
7. http://www.cut-the-knot.org
8. http://nrich.maths.org
9. http://archives.math.utk.edu/
10. http://www-groups.dcs.st-and.ac.uk/~history/
11. http://www.maa.org/
12. http://e-math.ams.org/
13. Website on Books in Mathematics

Practical/Lab Work to be performed in Mathematics Lab (FOSS)
Suggested Software's:

Maxima/Scilab /Python/R.

Introduction to the software and commands related to the topic.

1. Getting Started.
2. Sets and Functions.
3. Algebra-Polynomials.
4. Algebra-Rational functions and other expressions.
5. Algebra-Matrices and Determinants.
6. Polar Coordinates.
7. Successive Differentiation.
8. Integral Calculus- Reduction Formulae.
9. Plotting 2D.
10. Plotting 3D.

Course Articulation Matrix - 212139

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	1	2	2	1	-	1	1	-	1
CO 2	3	3	2	1	1	1	-	1	-	1	-	1
CO 3	2	2	-	1	3	2	1	1	1	1	1	1
CO 4	3	3	2	2	2	3	1	1	2	2	2	2
Weighted Average	**2.75**	**2.75**	**2**	**1.25**	**2**	**2**	**1**	**1**	**1.33**	**1.25**	**1.5**	**1.25**

OE(1) Mathematics Syllabus for All Programs (Except Science)

Semester I

Course Code: 21OEMAT101	**Course Title:** OE(1) Optional Mathematics – I
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:**40
Exam Duration:2 ½ Hours	**Semester End Examination Marks:**60

Course Outcomes (COs):

CO 1: Design solutions and implement the elementary operations for matrices and system of linear equations.

CO 2: Examine and develop solution for polynomial equations using various methods.

CO 3: Evaluation of Polar co-ordinates applying methods of differential calculus.

Course Content

UNIT – 1	**Matrices**	**14 HOURS**

Recapitulation of Symmetric and Skew Symmetric matrices, Algebra of Matrices; Row and column reduction, Echelon form. Rank of a matrix; Inverse of a matrix by elementary operations; Solution of system of linear equations; Criteria for existence of non-trivial solutions of homogeneous system of linear equations. Solution of non-homogeneous system of linear equations. Cayley- Hamilton theorem, inverse of matrices by Cayley-Hamilton theorem
(Without Proof).

UNIT – 2	**Theory of equations**	**14 HOURS**

Euclid's algorithm, Polynomials with integral coefficients, Remainder theorem, Factor theorem, Fundamental theorem of algebra(statement only), Irrational and complex roots occurring in conjugate pairs, Relation between roots and coefficients of a polynomial equation, Symmetric functions, Transformation, Reciprocal equations, Descartes' rule of signs, Multiple roots, Solving cubic equations by Cardon's method, Solving quartic equations by Descarte's Method.

UNIT – 3	**Polar Co-ordinates**	**14 HOURS**

Polar coordinates, angle between the radius vector and tangent. Angle of intersection of two curves (polar forms), length of perpendicular from pole to the tangent, pedal equations. Derivative of an arc in Cartesian, parametric and polar forms, curvature of plane curve-radius of curvature formula in Cartesian, parametric and polar and pedal forms- center of curvature, circle of curvature.

Books for References:

1. University Algebra - N.S. Gopala Krishnan, New Age International (P) Limited.
2. Algebra – Natarajan, Manicavasagam Pillay and Ganapathy.
3. Theory of Matrices - B S Vatsa, New Age International Publishers.
4. Matrices - A R Vasista, Krishna Prakashana Mandir.
5. Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi.
6. Applications of Calculus, Debasish Sengupta, Books and Allied (P) Ltd., 2019.
7. Calculus – Lipman Bers, Holt, Rinehart & Winston.
8. Calculus - S Narayanan & T. K. Manicavachogam Pillay, S Viswanathan Pvt. Ltd.,vol. I & II.

Course Articulation Matrix – 21OEMAT101

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	1	2	2	1	-	1	1	-	1
CO 2	3	3	2	1	1	1	-	1	-	1	-	1
CO 3	2	2	1	1	3	2	1	1	1	1	1	1
Weighted Average	**2.67**	**2.67**	**1.67**	**1**	**2**	**1.67**	**1**	**1**	**1**	**1**	**1**	**1**

OE(1) Mathematics Syllabus for All Programs (Except Science)

Semester I

Course Code: 21OEMAT102	**Course Title:** OE(1) Business Mathematics – I
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours:42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2 ½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Illustration of Set theory, Relations, functions, indices, logarithms, permutation and combination and their applications.

CO 2: Classify and design solutions for matrices and system of linear equations applying elementary operations.

CO 3: Analyze and apply the knowledge of limits, continuity and differentiability in solving problems. Construct extremum values function of higher order derivatives using partial and total derivatives.

Course Content

UNIT – 1	**Algebra**	**14 HOURS**
Set theory and simple applications of Venn Diagram, relations, functions, indices, logarithms, permutations and combinations. Examples on commercial mathematics.		

UNIT – 2	**Matrices**	**14 HOURS**
Definition of a matrix; types of matrices; algebra of matrices. Properties of determinants; calculations of values of determinants up to third order; Adjoint of a matrix, elementary row and column operations; solution of a system of linear equations having unique solution and involving not more than three variables. Examples on commercial mathematics.		

UNIT – 3	**Differential Calculus**	**14 HOURS**
Constant and variables, functions, Limits & continuity. Differentiability and Differentiation, partial differentiation, rates as a measure, maxima, minima, Partial Derivatives up to second order; Homogeneity of functions and Euler's Theorem; Total Differentials; Differentiation of implicit function with the help of total differentials, Maxima and Minima; cases of one variable involving second or higher order derivatives; Cases of two variables involving not more than one constraint.		

Books for References:

1. Basic Mathematics, Allel R.G.A, Macmillan, New Delhi.
2. Mathematics for Economics, Dowling, E.T. , Schaum's Series, McGraw Hill, London.
3. Quantitative Techniques in Management, Vohra, N.D., Tata McGraw Hill, New Delhi.
4. Business Mathematics, Soni R.S., Pitamber Publishing House, Delhi.

Course Articulation Matrix – 21OEMAT102

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	1	-	1	2	1	1	1	1	1	1
CO 2	3	2	1	1	1	2	1	-	1	1	-	1
CO 3	3	3	2	2	1	2	1	1	1	1	1	1
Weighted Average	**3**	**2.67**	**1.33**	**1.5**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**1**

OE(1) Mathematics Syllabus for All Programs (Except Science)

Semester I

Course Code: 21OEMAT103	**Course Title:** **O**E(1) Mathematical Aptitude - I
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2 ½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Evaluate problems on Number system, Series, divisibility, LCM, HCF, Fraction.

CO 2: Strategies to solve problems on Trains, Boats and Streams with Speed and Accuracy.

CO 3: Analyze and Evaluate problems on Time, Work and Wages, Pipes and Cistern, Problems on Clock and Calendar.

Course Content

UNIT – 1	**14 HOURS**
Number System, Types of Numbers, series (AP and GP), Algebraic operations BODMAS, Divisibility, LCM and HCF, Fraction, Simplification.	
UNIT – 2	**14 HOURS**
Time and Distance, Problems based on Trains, Boats and Streams.	
UNIT – 3	**14 HOURS**
Time, work and wages, Pipes and Cistern, Problems on Clock, Problems on Calendar.	

Books for References:

1. R.S. Aggarwal, "Quantitative Aptitude for Competitive Examinations", Revised Edition, S. Chand and Co. Ltd, New Delhi, 2018.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude : Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan, Pratogitaprakasan, Kic X, Kiran Prakasan publishers.
4. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill publications.

Course Articulation Matrix – 21OEMAT103

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	3	1	2	1	3	1	1	-	-	1	3
CO 2	2	3	1	2	1	3	1	1	1	1	1	3
CO 3	2	3	1	2	1	3	1	1	1	1	1	3
Weighted Average	**2**	**3**	**1**	**2**	**1**	**3**	**1**	**1**	**1**	**1**	**1**	**3**

DSC(2) Syllabus for B.Sc. Mathematics (Basic and Honors)

Semester II

Course Code:212239	**Course Title:** DSC(2): Algebra – II (Number Theory) and Calculus - II DSC(2) Lab : Theory based Practical's on Algebra – II (Number Theory) and Calculus – II
Course Credits:06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 : Acquiring the basic knowledge of divisibility, congruency, GCD, Prime and prime factorization, applying the concept of Euler function, Fermat's and Wilson's Theorem, Evaluating the product of r consecutive integers is divisible.

CO2 : Applying the skills of fundamental theorems in solving problems.

CO3 : Construct extreme values of function of the variables using partial derivatives and total derivatives.

CO4 : Classification of line and multiple integrals in solving problems. Evaluation of surface Area and Volume of conic sections using multiple integrals.

Course Content

Content	Hours
UNIT – 1	
Number Theory : Division Algorithm, Divisibility, Prime and composite numbers, Euclidean algorithm, Fundamental theorem of Arithmetic, The greatest common divisor and least common multiple. Congruences, Linear congruences, Simultaneous congruences, Euler's Phi-function, Wilson's, Euler's and Fermat's Theorems and their applications.	**14**

UNIT – 2	
Differential Calculus-I : Limits, Continuity, Differentiability and properties. Properties of continuous functions. Intermediate value theorem, Rolle's Theorem, Lagrange's Mean Value theorem, Cauchy's Mean value theorem and examples. Taylor's theorem, Maclaurin's series, Indeterminate forms and evaluation of limits using L'Hospital rule.	**14**
UNIT – 3	
Partial Derivatives : Functions of two or more variables-explicit and implicit functions, partial derivatives. Homogeneous functions- Euler's theorem and extension of Euler's theorem, total derivatives, differentiation of implicit and composite functions, Jacobians and standard properties and illustrative examples. Taylor's and Maclaurin's series for functions of two variables, Maxima-Minima of functions of two variables.	**14**
UNIT – 4	
Integral Calculus-II : *Line integral*: Definition of line integral and basic properties, examples on evaluation of line integrals. *Double integral*: Definition of Double integrals and its conversion to iterated integrals. Evaluation of double integrals by changing the order of integration and change of variables. Computation of plane surface areas using double integrals. *Triple integral*: Definition of triple integrals and evaluation, change of variables, volume as triple integral.	**14**

Books for References:

1. Differential Calculus, Shantinarayan, S. Chand & Company, New Delhi.
2. Applications of Calculus, Debasish Sengupta, Books and Allied (P) Ltd., 2019.
3. Calculus – Lipman Bers, Holt, Rinehart & Winston.
4. Calculus - Shanthinarayanan & T. K. Manicavachogam Pillay, S. Viswanathan Pvt. Ltd., vol. I & II.
5. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw Hill, 2008.
6. Integral Calculus, Shanthinarayan, New Delhi: S. Chand and Co. Pvt. Ltd.
7. Integral Calculus, Shantinarayan and P K Mittal, S. Chand and Co. Pvt. Ltd.
8. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.
9. David M Burton, Elementary Number Theory, 6th edition, McCraw Hill, 2007.
10. Emil Grosswald, Topics from the Theory of Numbers, Modern Birhauser, 1984.
11. Ivan Niven, Herbert S. Zuckerman and Hugh L. Montgomery, An Introduction to the Theory of Numbers, John Willey (New York), 1991.

Mathematics Web links:

1. http://scienceworld.wolfram.com/biography/topics/Mathematicians.html
2. http://teachers.sduhsd.k12.ca.us/abrown/index2.html
3. http://www.maths.tcd.ie/pub/HistMath/People/RBallHist.html
4. http://www.geometry.net/math.html
5. http://www-history.mcs.st-andrews.ac.uk/history/Indexes/Full_Alph.html
6. http://mathforum.org
7. http://www.cut-the-knot.org
8. http://nrich.maths.org
9. http://archives.math.utk.edu/
10. http://www-groups.dcs.st-and.ac.uk/~history/
11. http://www.maa.org/
12. http://e-math.ams.org/
13. Website on Books in Mathematics

Practical/Lab Work to be performed in Computer Lab Suggested

Software's: Maxima/Scilab//Python/R.

1. Programs related to Number Theory.
2. Limits and Continuity.
3. Differentiability.
4. Program to verify Mean value theorems.
5. Program for finding the Taylor's and Maclaurin's expansions of the given functions.
6. Program to verify the Euler's theorem and its extension.
7. Programs to construct series using Maclaurin's expansion for functions of two variables.
8. Program to evaluate the line integrals with constant and variable limits.
9. Program to evaluate the Double integrals with constant and variable limits.
10. Program to evaluate the Triple integrals with constant and variable limits.

Course Articulation Matrix - 212239

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	1	1	1	-	1	-	1	-	1
CO 2	3	3	1	1	1	2	1	1	-	1	1	2
CO 3	3	3	1	2	1	-	-	1	1	1	-	1
CO 4	3	3	2	1	2	1	1	1	1	1	1	2
Weighted Average	**3**	**2.75**	**1.25**	**1.25**	**1.25**	**1.33**	**1**	**1**	**1**	**1**	**1**	**1.5**

OE(2) Mathematics Syllabus for All Programs (Except Science)

Semester II

Course Code: 21OEMAT201	**Course Title:** OE(2) Optional Mathematics – II
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours:42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration:2 ½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Acquiring the basic knowledge of divisibility, congruency, GCD, Prime and prime factorization, applying the concept of Euler function, Fermat's and Wilson's Theorem, Evaluating the product of r consecutive integers is divisible.

CO 2: Applying the skills of fundamental theorems in solving problems.

CO 3: Construct extreme values of function of the variables using partial derivatives and total derivatives.

Course Content

UNIT – 1	**Number Theory**	**14 HOURS**
Division Algorithm, Divisibility, Prime and composite numbers, Euclidean algorithm, Fundamental theorem of Arithmetic, The greatest common divisor and least common multiple. Congruence, Linear congruence, Simultaneous congruence, Euler's Phi-function, Wilson's, Euler's and Fermat's Theorems and their applications.		
UNIT – 2	**Partial Derivatives**	**14 HOURS**
Functions of two or more variables-explicit and implicit functions, partial derivatives. Homogeneous functions- Euler's theorem and extension of Euler's theorem, total derivatives, differentiation of implicit and composite functions, Jacobians and standard properties and illustrative examples. Taylor's and Maclaurin's series for functions of two variables, Maxima-Minima of functions of two variables.		
UNIT – 3	**Integral Calculus**	**14 HOURS**
Line integral: Definition of line integral and basic properties, examples on evaluation of line integrals. *Double integral*: Definition of Double integrals and its conversion to iterated integrals. Evaluation of double integrals by changing the order of integration and change of variables. Computation of plane surface areas, *Triple integral*: Definition of triple integrals and evaluation-change of variables, volume as triple integral.		

Books for References:

1. Differential Calculus, Shanti Narayan, S. Chand & Company, New Delhi.
2. Applications of Calculus, Debasish Sengupta, Books and Allied (P) Ltd., 2019.
3. Calculus – Lipman Bers, Holt, Rinehart & Winston.
4. Calculus - Shanthinarayanan & T. K. Manicavachogam Pillay, S. Viswanathan Pvt. Ltd., vol. I & II.
5. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw Hill, 2008.
6. Integral Calculus, Shanthinarayan, S. Chand and Co. Pvt. Ltd.
7. Integral Calculus, Shantinarayan and P K Mittal, S. Chand and Co. Pvt. Ltd.
8. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.
9. David M Burton, Elementary Number Theory, 6th edition, McCraw Hill, 2007.
10. Emil Grosswald, Topics from the Theory of Numbers, Modern Birhauser, 1984.
11. Ivan Niven, Herbert S. Zuckerman and Hugh L. Montgomery, An Introduction to the Theory of Numbers, John Willey (New York), 1991.

Course Articulation Matrix – 21OEMAT201

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	1	1	1	-	1	-	1	-	1
CO 2	3	3	1	1	1	2	1	1	-	1	1	2
CO 3	3	3	1	2	1	-	-	1	1	1	-	1
Weighted Average	**3**	**2.67**	**1**	**1.33**	**1**	**1.5**	**1**	**1**	**1**	**1**	**1**	**1.33**

OE(2) Mathematics Syllabus for All Programs (Except Science)

Semester II

Course Code: 21OEMAT202	**Course Title:** OE(2) Business Mathematics – II
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours:42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration:2 ½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Apply the concept of profit, loss, discount, marked price, simple and compound interest, Taxes, Ratio, Installments, Percentage, Interest of reducing balance and flat interest to evaluate problems in everyday life.

CO 2: Measure the central tendency, Describing median, mode, AM, GM, HM. Represents dispersion by range, deviation, variance, standard deviation and standard error.

CO 3: Analyze and interpret correlation and regression by various methods for ungrouped data. Evaluate correlation and regression applying their properties.

Course Content

UNIT – 1	**Commercial Arithmeti**	14 HOURS

Interest**:** Concept of Present value and Future value, Simple interest, Compound interest, Nominal and Effective rate of interest, Examples and Problems Annuity: Ordinary Annuity, Sinking Fund, Annuity due, Present Value and Future Value of Annuity, Equated Monthly Installments (EMI) by Interest of Reducing Balance and Flat Interest methods, Examples and Problems.

UNIT – 2	**Measures of central Tendency and Dispersion**	14 HOURS

Frequency distribution: Raw data, attributes and variables, Classification of data, frequency distribution, cumulative frequency distribution, Histogram and give curves. Requisites of ideal measures of central tendency, Arithmetic Mean, Median and Mode for ungrouped and grouped data. Combined mean, Merits and demerits of measures of central tendency, Geometric mean: definition, merits and demerits, Harmonic mean: definition, merits and demerits, Choice of A.M., G.M. and H.M. Concept of dispersion, Measures of dispersion: Range, Variance, Standard deviation (SD) for grouped and ungrouped data, combined SD, Measures of relative dispersion: Coefficient of range, coefficient of variation. Examples and problems.

UNIT – 3	Correlation and regression	14 HOURS

Concept and types of correlation, Scatter diagram, Interpretation with respect to magnitude and direction of relationship. Karl Pearson's coefficient of correlation for ungrouped data. Spearman's rank correlation coefficient. (with tie and without tie) Concept of regression, Lines of regression for ungrouped data, predictions using lines of regression. Regression coefficients and their properties (without proof). Examples and problems.

Books for References:

1. Practical Business Mathematics, S. A. Bari New Literature Publishing Company New Delhi
2. Mathematics for Commerce, K. Selvakumar Notion Press Chennai
3. Business Mathematics with Applications, Dinesh Khattar & S. R. Arora S. Chand Publishing New Delhi
4. Business Mathematics and Statistics, N.G. Das &Dr. J.K. Das McGraw Hill New Delhi
5. Fundamentals of Business Mathematics, M. K. Bhowal, Asian Books Pvt. Ltd New Delhi
6. Mathematics for Economics and Finance: Methods and Modelling, Martin Anthony and Norman, Biggs Cambridge University Press Cambridge
7. Financial Mathematics and its Applications, Ahmad Nazri Wahidudin Ventus Publishing APS Denmark
8. Fundamentals of Mathematical Statistics, Gupta S. C. and Kapoor V. K.:, Sultan Chand and Sons, New Delhi.
9. Statistical Methods, Gupta S. P.: Sultan Chand and Sons, New Delhi.
10. Applied Statistics, Mukhopadhya Parimal New Central Book Agency Pvt. Ltd. Calcutta.
11. Fundamentals of Statistics, Goon A. M., Gupta, M. K. and Dasgupta, B. World Press Calcutta.
12. Fundamentals of Applied Statistics, Gupta S. C. and Kapoor V. K.:, Sultan Chand and Sons, New Delhi.

Course Articulation Matrix – 21OEMAT202

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	1	-	1	3	1	2	-	1	1	1
CO 2	3	2	1	1	-	1	1	-	-	1	-	1
CO 3	3	2	1	1	1	2	1	1	1	1	-	1
Weighted Average	**3**	**2.33**	**1**	**1**	**1**	**2**	**1**	**1.5**	**1**	**1**	**1**	**1**

OE(2) Mathematics Syllabus for All Programs (Except Science)

Semester II

Course Code: 21OEMAT203	**Course Title:** OE(2) Mathematical Aptitude - II
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours:42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration:2 ½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Evaluate percentage, Average, Ratio & proportion, partnership, Mixture and Problems based on Ages.

CO 2: Imbibe the concept of profit, loss, discount, simple & compound interest, Shares and debentures in Everyday life.

CO 3: Execute various ways of particular assignments by the help of permutation and combination, probability, True and Banker's Discount.

Course Content

UNIT – 1	**14 HOURS**
Percentage, Average, Problems based on Ages, Ratio and Proportion, Partnership and share, Mixtures.	
UNIT – 2	**14 HOURS**
Profit, Loss and Discount, Simple Interest, Compound Interest, Shares and Debentures.	
UNIT – 3	**14 HOURS**
Permutations and Combinations, Probability, True discount and Banker's discount.	

Books for References:

1. R.S. Aggarwal, "Quantitative Aptitude for Competitive Examinations",Revised Edition, S. Chand and Co. Ltd, New Delhi, 2018.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude : Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan Pratogitaprakasan, Kic X, Kiran Prakasan publishers.
4. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill publications.

Course Articulation Matrix – 21OEMAT203

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	1	-	-	3	1	2	1	1	1	2
CO 2	3	3	1	-	-	3	1	2	1	1	1	2
CO 3	3	3	1	1	1	3	1	1	1	1	1	1
Weighted Average	**3**	**3**	**1**	**1**	**1**	**3**	**1**	**1.67**	**1**	**1**	**1**	**1.67**

Continuous Formative Evaluation/Internal Assessment (DSC & OE)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance(the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of manual work, programme and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

C1 Component: 10 Marks : This will be based on a practical test. This should be completed by the 8th week of the semester.

C2 Component : 15 Marks : This will be based on practical test / assignment for 10 marks and 5 marks for practical record. This should be completed by the 16th week of the semester.

C3 Component:

Main Examination of 3 hours duration : Max Marks: 25 (20 + 5)
Three experiments will be given out of which two experiments are to be executed, each carrying 10 marks and 5 marks for viva.

The student is evaluated for 25 marks in **C3** as per the following scheme:

Assessment Criteria	Marks
For each Experiment Manual work – 04 Marks Program writing – 04 Marks Execution – 02 Marks	10 × 2 = 20
Viva	05
Total	**25**

DSC Mathematics Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** 2 ½ Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part - A and Part – B.
- Part – A: Should consist of **08 Questions** (2 Questions from each Unit). **6 Questions** to be answered.
- Part – B: Should consist of **4 Main** Questions (1 from Each Unit). **5 Sub Question** will be given, out of which **3 Questions** to be answer

Part A

Answer any six questions. Each Question carries 2 Marks. 6×2 =12

I.

a.
b.
.
.
h

Part B

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

II. a.
b.
c.
d.
e.

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

III a.
b.
c.
d.
e.

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

IV a.
b.
c.
d.
e.

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

V a.
b.
c.
d.
e.

OE Mathematics Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** 2 ½ Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part - A and Part – B.
- Part – A: Consist of **09 Questions.** (3 Questions from each Unit). **6 Questions** to be answered.
- Part – B: Consist of **3 Main** Questions (1 from Each Unit). **6 Sub Question** will be given, out of which **4 Questions** to be answer

Part A

Answer any six questions. Each Question carries 2 Marks. 6×2 =12

I

a.
b.
.
.
i.

Part B

Answer any FOUR questions. Each Question carries 4 Marks. 4×4 =16

II a.
b.
c.
d.
e.
f.

Answer any FOUR questions. Each Question carries 4 Marks. 4×4 =16

III a.
b.
c.
d.
e.
f.

Answer any FOUR questions. Each Question carries 4 Marks. 4×4 =16

IV a.
b.
c.
d.
e.
f.

Board of Studies

Sl.No.	Name and address	Designation	Signature
1	Dr. Sumathi M P HoD, Dept of Mathematics SBRR Mahajana First Grade College, Mysuru Mob. 9880810618 sumathimp.fgc@mahajana.edu.in	Chairperson	Sumathi. M.P
2	Prof. D D Somashekar Professor ,DOS in Mathematics Manasagangothri, Mysuru Mob. 9480057505 somashekara@maths.uni-mysore.ac.in	Member	
3	Dr M C Mahesh Kumar Assistant Professor GFGC, KR Puram, Bangalore-36 Mob. 9844753730 Softmahe15@gmail.com	Member	M. C. Mahesh
4	Kemparaju R Assistant Professor Government college for women, Chintamani-563125 Mob. 9844335388 kemps007@gmail.com	Member	
5	Niranjan L Assistant Professor SBRR Mahajana First Grade College Mysuru, Mob: 9108257072 niranjankavi.np@gmail.com	Member	
6	Harshavardhana C N Assistant Professor Govt First Grade college for Women, Holenarasipura. Mob. 8971876885 cnhmaths@gmail.com	Member	

Sumathi. M.P
- Chairperson
BOS/BOE in Mathematics
SBRR Mahajana First Grade College
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Jayalakshmipuram, Mysuru-570 012

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DEPARTMENT OF MATHEMATICS

Motto

Accuracy and Perfection

Vision

To Create a Mindset to apply Analytical Skills

Mission

Empower with Logic Enhance with Skills

Program Outcomes (POs) for Bachelor of Science

PO 1 **: Domain Knowledge -** Acquire and apply knowledge of science in relevant areas.

PO 2 **: Problem Analysis –** Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3 **: Design and Development of Solutions –** Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4 **: Investigation & Research** – Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5 **: Use of Modern Techniques/Tools** – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO 6 **: Impact of Science on Society** – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO 7 **: Environment and Sustainability** – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO 8 **: Moral and Ethical Values** – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO 9 **: Individual and Team Work with Time Management** – Work productively in a team or as an individual while exhibiting time management skills.

PO 10 **: Communication** – Develop the caliber to convey various concepts of science effectively.

PO 11 **: Project Management and Finance** – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12 **: Life-long Learning** – Engage in the art of self-directed learning.

List of BoS Members

Sl. No.	Category	Name & Designation	Address for Communication	e-Mail & Mobile No.
1	Chairperson	Dr. Sumathi M P Assistant Professor & HoD	Department of Mathematics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	sumathimp.fgc@mahajana.edu.in 9880810618
2	Member	Sri. Niranjan L Assistant Professor	Department of Mathematics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	niranjankavi.np@gmail.com 9108257072
3	Two Experts from Other University	Dr Sudha T G Associate Professor	Department of Mathematics Nrupathunga University (Govt. Science College Autonomous) Nrupathunga Road, Bengaluru-560001	tgsudha65@gmail.com 9003310571
4		Dr. Jagadeesh R Assistant Professor	Department of Mathematics Government First Grade college Ramanagar	jagadeeshr1978@gmail.com 9448006546
5	Nominee by the Vice Chancellor	Dr. R Rangarajan Professor	DoS in Mathematics Manasagangotri, University of Mysore, Mysuru – 570006	ranga@maths.uni-mysore.ac.in 9611109079
6	Alumnus	Harshavardhana C N Assistant Professor	Department of Mathematics Govt First Grade college for Women, Holenarasipura	cnhmaths@gmail.com 8971876885

Course Structure(NEP 2020)

Discipline Specific Courses (DSC) and Open Elective (OE)

II Year

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/ P	L:T:P	C1	C2	C3		
MATHEMATICS – III Semester									
DSC(3)	Algebra–III and Differential Equations – I **222339**	**4**	**0**	**4:0:2 (6credits)**	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(3)-Lab	Theory based Practical's on Algebra - III and Differential Equations – I **222339**	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
OE(3)	Discrete Mathematics – I **22OEMAT301**	**3**	**0**	**3:0:0**	**20**	**20**	**60**	**2 ½ Hours**	**100**
	Mathematical Aptitude –III **22OEMAT302**								
	(Any one OE course to be opted)								

MATHEMATICS – IV Semester									
DSC(4)	Real Analysis - I and Differential Equations – II **222439**	**4**	**0**	**4:0:2** (6credits)	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(4) Lab	Theory based Practical's on Real Analysis - I and Differential Equations – II **222439**	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
OE(4)	Basics of Number Theory **22OEMAT401** Mathematical Aptitude- IV **22OEMAT402** **(Any one OE course to be opted)**	**3**	**0**	**3:0:0**	**20**	**20**	**60**	**2 ½ Hours**	**100**

DSC(3) Mathematics Syllabus for B.Sc. Mathematics (Basic and Honors)

Semester III

Course Code:222339	**Course Title:** DSC(3) : Algebra–III and Differential Equations – I DSC(3) Lab :Theory based Practical's on Algebra–III and Differential Equations – I
Course Credits:06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 : Acquiring the knowledge and structure of group, subgroup, cyclic group and group of permutation.

CO2 : Analyzing and applying the concepts of normal subgroup, quotient group , homomorphism and isomorphism for groups.

CO3 : Identifying and evaluating differential equations using different techniques.

CO4 : Applying various methods to solve first order and higher degree differential equations. Designing solutions for ordinary differential equations and simultaneous equations with constant coefficients by constructing complementary function and particular integral.

Course Content

Content	Hours
UNIT – 1	
Group Theory – I : Definition and examples of groups – Some general properties of Groups, Subgroups, Group of permutations – Cyclic permutations – Even and odd permutations. Order of an element of a group – Cyclic groups problems and theorems.	**14**

UNIT – 2	
Group Theory – II : Cosets, Index of a group, Lagrange's theorem, consequences, Normal Subgroups, Quotient groups – Homomorphism. – Kernel of homomorphism – Isomorphism – Automorphism -Fundamental theorem of homomorphism, Cayley's theorem.	**14**
UNIT – 3	
Differential Equations – I : Recapitulation of Definition, examples of differential equations, Formation of differential equations by elimination of arbitrary constants, Differential equations of first order – Separation of variables, Reducible to separation of variables, Homogeneous differential equations, Reducible to homogeneous, Exact differential equations, Reducible to exact, Integrating factors found by inspection and the determination of integrating factors, Linear differential equations, Bernoulli's differential equations.	**14**
UNIT – 4	
Differential Equations – II: Equations of First order and higher degree – Solvable for p, Solvable for x, Solvable y, Clairaut's equations – Singular and General solutions. Ordinary Linear differential equations with constant coefficients – Complementary function – particular integral – Inverse differential operators. Simultaneous differential equations (two variables with constant coefficients).	**14**

Books for References:

1. Daniel A Murray – Introductory Course to Differential equations
2. Earl David Rainville and Philip Edward Bedient – A short course in Differential equations, Prentice Hall College Div; 6th edition.
3. I N Herstien – Topics in Algebra.
4. Joseph Gallian – Contemporary Abstract Algebra, Narosa Publishing House, New Delhi, Fourth Edition.
5. G. D. Birkhoff and S Maclane – A brief Survey of Modern Algebra.
6. J B Fraleigh – A first course in Abstract Algebra.
7. Michael Artin – Algebra, 2nd ed. New Delhi, India: PHI Learning Pvt. Ltd., 2011.

8. Vashista, A First Course in Modern Algebra, 11th ed.: Krishna Prakasan Mandir, 1980.
9. R Balakrishan and N.Ramabadran, A Textbook of Modern Algebra, 1st ed. New Delhi, India: Vikas publishing house pvt. Ltd., 1991.
10. M D Raisinghania, Advanced Differential Equations, S Chand and Co. Pvt. Ltd., 2013.
11. F Ayres, Schaum's outline of theory and problems of Differential Equations, 1st ed. USA McGraw-Hill, 2010.
12. S Narayanan and T K Manicavachogam Pillay, Differential Equations .: S V Publishers Private Ltd., 1981.
13. E Kreyszig- Advanced Engineering Mathematics, Wiley India Pvt. Ltd.

G F Simmons, Differential equation with Applications and historical notes, 2nd ed.: McGraw- Hill Publishing Company, Oct 1991.

Mathematics Weblinks:

1. http://scienceworld.wolfram.com/biography/topics/Mathematicians.html
2. http://teachers.sduhsd.k12.ca.us/abrown/index2.html
3. http://www.maths.tcd.ie/pub/HistMath/People/RBallHist.html
4. http://www.geometry.net/math.html
5. http://www-history.mcs.st-andrews.ac.uk/history/Indexes/Full_Alph.html
6. http://mathforum.org
7. http://www.cut-the-knot.org
8. http://nrich.maths.org
9. http://archives.math.utk.edu/
10. http://www-groups.dcs.st-and.ac.uk/~history/
11. http://www.maa.org/
12. http://e-math.ams.org/
13. Website on Books in Mathematics

Practical/Lab Work to be performed in Mathematics Lab (FOSS)
Suggested Software's:

Maxima/Scilab /Python/R.

Introduction to the software and commands related to the topic.

1. Generate Cayley's table.
2. Verifying whether given operator is binary or not.
3. Finding identity and inverse elements of a group.
4. Finding left and right cosets of a group.
5. To find all the Cyclic subgroups of a given group.
6. Verification of Normality of a given subgroup of a group.
7. Solution of Differential equation and plotting the graph of the solution: Variable Separable.
8. Solution of Differential equation and plotting the graph of the solution: Homogeneous Equations.
9. Solution of Differential equation and plotting the graph of the solution: Linear differential equations.
10. Solution of Differential equation and plotting the graph of the solution: Bernoulli's equations.
11. Solution of Differential equation and plotting the graph of the solution: Exact equations.
12. Finding Complementary function and particular Integral of constant coefficients.

Note: Student has to execute a minimum of 8 programs in each part to complete the Lab course.

Course Articulation Matrix - 222339

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	1	-	-	1	1	1	1	2	1	1	2
CO 2	3	2	1	-	1	1	1	1	2	1	1	2
CO 3	3	3	1	1	2	2	1	1	1	1	1	2
CO 4	3	3	1	1	2	2	1	1	1	1	1	2
Weighted Average	**3**	**2.25**	**1**	**1**	**1.5**	**1.5**	**1**	**1**	**1.5**	**1**	**1**	**2**

OE(3) Mathematics Syllabus for All Programs (Except Science)

Semester III

Course Code: 22OEMAT301	**Course Title:** OE(3) Discrete Mathematics
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours:42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2 ½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Apply set theoretic identities involving, Unions, Intersections, Cartesian product, Relation & Ordering, Compatibility and Composition of Binary relation.

CO 2: Applying the Applications of Graph theory involving path, connectedness , trees, matrix representation of graphs in real life problems

CO 3: Formulate the negation, converse, contrapositive, conditional, Biconditional, Technologies & equivalence relation of a quantified implication, both linguistically and in symbolic form.

Course Content

UNIT – 1	**Basics of Set The**	**14 HOURS**

Notation, Inclusion and Equality of sets, The power set, Operation on sets, Venn diagram, Set identities, Ordered pairs and Cartesian products. Relations and ordering – Properties of binary relation in a set, Relation matrix and Graph of a relation. Equivalence relations, Compatibility relations, composition of Binary relation.

UNIT – 2	**Graph Theory**	**14 HOURS**

Basic definitions, Paths and Connectedness, Matrix representation of Graphs, Trees.

UNIT – 3	**Mathematical Logic**	**14 HOURS**

Statements and Notation, Connectives, Negation, Conjunction, Disjunction,, Statement formulas and Truth tables, Conditional and Bi-conditional, Tautologies, Equivalence of formulas, Tautological Implications.

Books for References:

1. Discrete Mathematical Structures with Application to computer science by J. P. Tremblay, R. Manohar 3rd Edition – Tata McGraw Hill.
2. Discrete Mathematical Structures by B. Kolman, R. C. Busby and S. Rose, 3rd edition.
3. Introduction to discrete mathematics by C. L. Liu, McGraw Hill, 2nd edition, 1985.
4. Discrete Mathematics by S. A. Witala, McGraw Hill, 1987.

Course Articulation Matrix - 22OEMAT301

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	3	1	1	1	2	1	1	1	1	1	2
CO 2	2	3	1	2	1	2	1	1	1	1	1	2
CO 3	3	3	1	2	1	1	1	1	1	1	1	1
Weighted Average	**2.33**	**3**	**1**	**1.67**	**1**	**1.67**	**1**	**1**	**1**	**1**	**1**	**1.67**

OE(3) Mathematics Syllabus for All Programs (Except Science)

Semester III

Course Code: 22OEMAT302	**Course Title:** OE(3) Mathematical Aptitude - III
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours:42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2 ½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Examine and Develop solution for polynomial equations, linear equation and problems based on Ages.

CO 2: Evaluate the problems on Area, Volume and Surface area for some conic sections.

CO 3: Analysis of Direction test, Relation test and seating puzzles using various techniques.

Course Content

UNIT – 1	**14 HOURS**
Algebraic Expressions, Polynomials, Fundamental operations on Algebraic expressions, Factorization, Linear equations and problems based on Ages, Quadratic equations.	
UNIT – 2 **Mensuration**	**14 HOURS**
Area, Volume and Surface area (Cylinder, Cone, Sphere).	
UNIT – 3 **Verbal Reasoning**	**14 HOURS**
Direction Test, Relation Test, Venn Diagram Analysis Test, Seating puzzles.	

Books for References:

1. R.S. Aggarwal, "Quantitative Aptitude for Competitive Examinations", Revised Edition, S. Chand and Co. Ltd, New Delhi, 2018.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude : Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan, Pratogita prakasan, Kic X, Kiran Prakasan publishers.
4. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill publications.

Course Articulation Matrix - 22OEMAT302

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	3	1	2	1	1	1	1	1	1	1	2
CO 2	2	3	1	2	1	3	1	1	1	1	1	3
CO 3	2	3	1	2	1	2	1	1	1	1	1	2
Weighted Average	**2**	**3**	**1**	**2**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**2.33**

DSC(4) Mathematics Syllabus for B.Sc. Mathematics (Basic and Honors)

Semester IV

Course Code:222439	**Course Title:** DSC(4) : Real Analysis – I and Differential Equations – II DSC(4) Lab: Theory based Practical's on Real Analysis – I and Differential Equations – II
Course Credits:06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 : Interpreting the behavior of convergence , divergence, oscillatory and monotonic sequences with their general principles.

CO2 : Evaluation of convergence, divergence and oscillatory series applying various methods.

CO3 : Apply various methods to evaluate linear differential equations and total differential equations.

CO4 : Formation of Partial differential equations and designing solutions for first order non-linear partial differential equations using standard methods.

Course Content

Content	Hours
UNIT – 1	
Sequences : Sequence of real numbers – Bounded and unbounded sequences – Infimum and supremum of a sequence – Limit of a sequence – Sum, product and quotient of limits – Standard theorems on limits – Convergent , divergent and oscillatory sequences – Discuss the convergence x^n, $n^{\frac{1}{n}}$, $\left(1+\frac{1}{n}\right)^n$ and standard problems – Monotonic sequences and their properties – Cauchy's general principle of convergence.	**14**

UNIT – 2

Infinite Series : Infinite series of real numbers – Convergence and Divergence - Oscillation of series – Properties of convergence – Series of positive terms – Geometric series – p – series – Comparison tests – D'Alembert's ratio test – Raabe's test – Cauchy's root test – Leibnitz's test for alternating series.	**14**

UNIT – 3

Linear differential equations : Cauchy – Euler differential equations, Solution of ordinary second order linear differential equations with variable coefficients by various methods such as: (i) When a part of complementary function is given. (i) Changing the independent variable. (ii) Changing the dependent variable. (iii) By method of variation of parameters. (iv) Exact method. Total differential equations - Necessary and sufficient condition for the equation Pdx + Qdy + Rdz = 0 to be exact (proof only for the necessary part) – Simultaneous equations of the form $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$.	**14**

UNIT – 4

Partial differential equations (14 hrs) : Basic concepts – Formation of a partial differential equations by elimination of arbitrary constants and functions – Solution of partial differential equations – Solution by Direct integration, Lagrange's linear equations of the form Pp + Qq = R , Standard types of first order non-linear partial differential equations – Charpit's method – Homogenous linear equations with constant coefficient – Rules for finding the complementary function – Rules for finding the particular integral, Method of separation of variables (product method).	**14**

Books for References:

1. G. Stephonson – An introduction to Partial Differential Equations.
2. B. S. Grewal – Higher Engineering Mathematics
3. E Kreyszig- Advanced Engineering Mathematics, Wiley India Pvt. Ltd.
4. E D Reinville and P E Bedient – A Short Course in Differential Equations
5. D A Murray – Introductory Course in Differential Equations.
6. G P Simmons – Differential Equations
7. F. Ayres – Differential Equations (Schaum Series)
8. Martin Brown – Application of Differential Equations.
9. M D Raisinghania, Advanced Differential Equations, S Chand and Co. Pvt. Ltd., 2013.
10. S C Malik –Real Analysis
11. Leadership project – Bombay university- Text book of mathematical analysis
12. S S Bali – Real analysis.
13. Richard R Goldberg, Methods of Real Analysis, Indian ed.

Mathematics Web links:

1. http://scienceworld.wolfram.com/biography/topics/Mathematicians.html
2. http://teachers.sduhsd.k12.ca.us/abrown/index2.html
3. http://www.maths.tcd.ie/pub/HistMath/People/RBallHist.html
4. http://www.geometry.net/math.html
5. http://www-history.mcs.st-andrews.ac.uk/history/Indexes/Full_Alph.html
6. http://mathforum.org
7. http://www.cut-the-knot.org
8. http://nrich.maths.org
9. http://archives.math.utk.edu/
10. http://www-groups.dcs.st-and.ac.uk/~history/
11. http://www.maa.org/
12. http://e-math.ams.org/
13. Website on Books in Mathematics

Practical/Lab Work to be performed in Computer Lab Suggested

Software's: Maxima/Scilab//Python/R.

1. To test the convergence of the Sequence.
2. To test the convergence of the sequence using Cauchy's criterion.
3. To verify whether the given sequence is monotonically Increasing or Decreasing.
4. To test the convergence of the series.
5. To test the convergence of the series by D'Alembert's ratio test and Raabe's test.

6. To solve second order LDE when a part of the complementary function is known.
7. To solve second order LDE by changing the dependent variable (Normal form).
8. To find the Wronskian of second order LDE.
9. To test for exactness and solving second order LDE.
10. To verify the condition for Integrability of a total D.E.
11. To solve first order non linear PDE containing p and q only.
12. To solve first order non linear PDE of the form $f_1(x,p)=f_2(y,q)$.

Course Articulation Matrix - 222439

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	-	3	-	-	-	1	1	-	1
CO 2	1	2	2	-	3	1	1	1	1	1	-	1
CO 3	2	3	2	1	3	-	-	1	2	2	1	1
CO 4	1	2	2	-	3	-	-	-	1	-	-	1
Weighted Average	**1.5**	**2.25**	**1.75**	**1**	**3**	**1**	**1**	**1**	**1.25**	**1**	**1**	**1**

OE(4) Mathematics Syllabus for All Programs (Except Science)

Semester IV

Course Code: 22OEMAT401	**Course Title:** OE(4) Basic of Number Theory
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2 ½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Analyzing Binomial theorem and Mathematical induction in solving real life problems.
CO 2: Acquiring the knowledge of divisibility, GCD, LCM and relation between GCD & LCM.
CO 3: Apply the properties of congruences, Binary & Decimal representation of integers with Chinese remainder theorem in evaluating practical problems.

Course Content

UNIT – 1	**14 HOURS**
Binomial Theorem, Mathematical Induction.	
UNIT – 2 **Number System**	**14 HOURS**
Test for Divisibility, Number of divisors and Sum of divisors of a number, Greatest Common Divisor (GCD), Least Common Multiple (LCM), Relation between GCD and LCM, Representation of a GCD as a linear combination of given two numbers.	
UNIT – 3 **Congruence**	**14 HOURS**
Basic properties of congruence, Binary and Decimal representations of integers, Linear Congruences and the Chinese Remainder Theorem.	

Books for References:

1. An Introduction to the Theory of Numbers by Ivan Niven, Herbert S. Zuckerman, Hugh L. Montgomery.
2. Elementary Number Theory by David M. Burton.

Course Articulation Matrix - 22OEMAT401

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	-	2	1	1	1	1	1	1	1
CO 2	1	1	2	-	1	-	-	-	1	-	-	1
CO 3	1	1	2	-	1	-	-	-	1	-	-	1
Weighted Average	**1.33**	**1.33**	**1.66**	**-**	**1.33**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

OE(4) Mathematics Syllabus for All Programs (Except Science)

Semester IV

Course Code: 22OEMAT402	**Course Title:** OE(4) Mathematical Aptitude – IV
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours:42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2 ½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Analysing & Interpretation of Data.
CO 2: Apply the properties of Surds , Indices and logarithm in solving problems.
CO 3: Enahancing analytical reasoning through classification, series test,

Course Content

UNIT – 1	**14 HOURS**
Data interpretation, Data sufficiency.	
UNIT – 2	**14 HOURS**
Surds & Indices, Logarithm and its properties.	
UNIT – 3 **Non - Verbal Reasoning**	**14 HOURS**
Series Test, Analogy, Classification, Cube and Dice, Analytical Reasoning.	

Books for References:

1. R.S. Aggarwal, "Quantitative Aptitude for Competitive Examinations", Revised Edition, S. Chand and Co. Ltd, New Delhi, 2018.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude : Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan, Pratogita prakasan, Kic X, Kiran Prakasan publishers.
4. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill publications.

Course Articulation Matrix - 22OEMAT402

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	-	2	1	1	1	1	1	1	1
CO 2	1	1	2	-	1	-	-	-	1	-	-	1
CO 3	1	1	2	-	1	-	-	-	1	-	-	1
Weighted Average	**1.33**	**1.33**	**1.66**	**-**	**1.33**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

Continuous Formative Evaluation/Internal Assessment (DSC & OE)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance(the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of manual work, programme and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

• The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

C1 Component: 10 Marks : This will be based on a practical test. This should be completed by the 8th week of the semester.

C2 Component : 15 Marks : This will be based on practical test / assignment for 10 marks and 5 marks for practical record. This should be completed by the 16th week of the semester.

• The student is evaluated for 25 marks in **C3** as per the following scheme:

Assessment Criteria	Marks
For each Experiment Manual work – 04 Marks Program writing – 04 Marks Execution – 02 Marks	$10 \times 2 = 20$
Viva	05
Total	**25**

DSC Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** 2 ½ Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part - A and Part – B.
- **Part – A** : Should consist of **08 Questions** (2 Questions from each Unit).
  6 Questions to be answered.
- **Part – B** : Should consist of **4 Main** Questions (1 from Each Unit).
  5 Sub Question will be given, out of which **3 Questions** to be answer

Part A

Answer any six questions. Each Question carries 2 Marks. 6×2 =12

I.

a.
b.
.
.
h

Part B

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

II. a.
b.
c.
d.
e.

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

III a.
b.
c.
d.
e.

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

IV a.
b.
c.
d.
e.

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

V a.
b.
c.
d.
e.

OE Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** 2 ½ Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part - A and Part – B.
- **Part – A** : Consist of **09 Questions.** (3 Questions from each Unit).
  6 Questions to be answered.
- **Part – B** : Consist of **3 Main** Questions (1 from Each Unit).
  6 Sub Question will be given, out of which **4 Questions** to be answer

Part A

Answer any six questions. Each Question carries 2 Marks. 6×2 =12

I

a.
b.
.
.
i.

Part B

Answer any FOUR questions. Each Question carries 4 Marks. 4×4 =16

II a.
b.
c.
d.
e.
f.

Answer any FOUR questions. Each Question carries 4 Marks. 4×4 =16

III a.
b.
c.
d.
e.
f.

Answer any FOUR questions. Each Question carries 4 Marks. 4×4 =16

IV a.
b.
c.
d.
e.
f.

Board of Studies

Sl.No.	Name and address	Designation	Signature
1	Dr. Sumathi M P HoD, Dept of Mathematics SBRR Mahajana First Grade College, Mysuru Mob. 9880810618 sumathimp.fgc@mahajana.edu.in	Chairperson	Sumathi.MP 16/9/22
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3	Dr Sudha T G Associate Professor, Dept of Mathematics Nrupathunga University (Govt. Science College Autonomous) Nrupathunga Road,Bengaluru-560001 Mob. 9535056766 tgsudha65@gmail.com	Member	Sudha 16/9/2022
4	Dr. Jagadeesh R Assistant Professor, Dept of Mathematics Government First Grade college Ramanagar Mob.9448268140 jagadeeshr1978@gmail.com	Member	Jagadeesh R 16/9/22
5	Niranjan L Assistant Professor SBRR Mahajana First Grade College Mysuru, Mob: 9108257072 niranjankavi.np@gmail.com	Member	
6	Harshavardhana C N Assistant Professor Govt First Grade college for Women, Holenarasipura. Mob. 8971876885 cnhmaths@gmail.com	Member	16/09/2022

Sumathi.M.P
Chairperson
BOS/BOE in Mathematics
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru-570 012

DEPARTMENT OF MATHEMATICS

Motto

Accuracy and Perfection

Vision

To Create a Mindset to apply Analytical Skills

Mission

Empower with Logic Enhance with Skills

Program Outcomes (POs) for Bachelor of Science

PO 1 **: Domain Knowledge -** Acquire and apply knowledge of science in relevant areas.

PO 2 **: Problem Analysis –** Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3 **: Design and Development of Solutions –** Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4 **: Investigation & Research** – Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5 **: Use of Modern Techniques/Tools** – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO 6 **: Impact of Science on Society** – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO 7 **: Environment and Sustainability** – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO 8 **: Moral and Ethical Values** – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO 9 **: Individual and Team Work with Time Management** – Work productively in a team or as an individual while exhibiting time management skills.

PO 10 **: Communication** – Develop the caliber to convey various concepts of science effectively.

PO 11 **: Project Management and Finance** – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12 **: Life-long Learning** – Engage in the art of self-directed learning.

List of BoS Members

Sl. No.	Category	Name & Designation	Address for Communication	e-Mail & Mobile No.
1	Chairperson	Dr. Sumathi M P Assistant Professor & HoD	Department of Mathematics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	sumathimp.fgc@mahajana.edu.in 9880810618
2	Member	Sri. Niranjan L Assistant Professor	Department of Mathematics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	niranjankavi.np@gmail.com 9108257072
3	Two Experts from Other University	Dr Sudha T G Associate Professor	Department of Mathematics Nrupathunga University (Govt. Science CollegeAutonomous) Nrupathunga Road, Bengaluru-560001	tgsudha65@gmail.com 9003310571
4		Dr. Jagadeesh R Assistant Professor	Department of Mathematics Government First Grade college Ramanagar	jagadeeshr1978@gmail.com 9448006546
5	Nominee by the Vice Chancellor	Dr. R Rangarajan Professor	DoS in Mathematics Manasagangotri, University of Mysore, Mysuru – 570006	ranga@maths.uni-mysore.ac.in 9611109079
6	Alumnus	Harshavardhana C N Assistant Professor	Department of Mathematics Govt First Grade college for Women, Holenarasipura	cnhmaths@gmail.com 8971876885

Course Structure (NEP 2020)

Discipline Specific Courses (DSC) and Skill Enhancement Course (SEC)

III Year

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		
MATHEMATICS – V Semester									
DSC(5)	Real Analysis-II and Complex Analysis **232539**	**4**	**0**	**4:0:2 (6credits)**	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(5)-Lab	Theory based Practical's on Real Analysis-II and Complex Analysis **232539**	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
DSC(6)	Advanced algebra and Discrete Mathematics **232540**	**4**	**0**	**4:0:2 (6credits)**	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(6)-Lab	Theory based Practical's on Advanced algebra and Discrete Mathematics **232540**	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
SEC(1) Theory & Practical	Programming with Python **23EMPMAT01**	**2**	**0**	**2:0:1**	**10**	**10**	**30**	**1 ½ Hours**	**100**
		0	**2**		**10**	**15**	**25**	**3 Hours**	

MATHEMATICS – VI Semester									
DSC(7)	Linear Algebra **232639**	**4**	**0**	**4:0:2 (6credits)**	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(7)-Lab	Theory based Practical's on Linear Algebra **232639**	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
DSC(8)	Numerical Analysis **232640**	**4**	**0**	**4:0:2 (6credits)**	**20**	**20**	**60**	**2 ½ Hours**	**150**
DSC(8)-Lab	Theory based Practical's on Numerical Analysis **232640**	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
SEC(2)	Internship (Industries /Institutions /project) **23INTMAT01**	**0**	**4**	**0:0:2**	**10**	**15**	**25**	**3 Hours**	**50**

DSC(5) Mathematics Syllabus for B.Sc. Mathematics

(Basic and Honors)

Semester: V

Course Code: 232539	**Course Title:** DSC(5) : Real Analysis-II and Complex Analysis DSC(5) : Lab :Theory based Practical's on Real Analysis-II and Complex Analysis
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 : Computing upper and lower Riemann sums and Criterion for integrability of functions and Mean Value Theorems.

CO2 : Evaluate the properties of analytic functions and harmonic functions.

CO3 : Identifying and evaluating integral theorems and its applications.

CO4 : Analyze and apply various methods of transformations.

Course Content

Content	Hours
UNIT – 1	
Riemann Integration : Definition & examples for partition of an interval, Refinement and Common refinement of a partition. Lower and Upper Riemann (Darboux) sums - definition, properties & problems. Riemann Integral-Lower and Upper integrals (definition & problems), Darboux's theorem and Criterion for Integrability, Integrability of sum, difference, product, quotient and modulus of integrable functions. **Integral as a limit of sum (Riemann sum)** -Problems. **Some integrable functions** -Integrability of continuous functions, monotonic functions, bounded function with finite number of discontinuity. Fundamental theorem of Calculus- related problems, change of variables, integration by parts, first and second mean value theorems of integral calculus.	**15**
UNIT – 2	
Complex number - Cartesian and Polar form (Definitions, properties and problems) – Geometrical representation of complex plane (z-plane); Euler's formula, $e^{i\theta} = cos\theta + i\, sin\theta$. Separate the real and imaginary parts of some standard functions $(,e^z, sinz, cosz, logz\ etc)$. Dot and vector product of z_1 and z_2. Equation of a straight line and circle in a complex form and Represent graphically (locus of a point). **Functions of a complex variable** - Limit of a function, Continuity and differentiability, Analytic functions, Singular points (definitions and related problems); Cauchy-Riemann equations - Cartesian and Polar forms – Proof & Problems, Necessary and sufficient condition for a function to be analytic (Statement only); Harmonic functions-Definition and problems; Properties of analytic functions - Various properties with proofs; Construction of analytic functions: i) Milne Thomson Method (Only problems) ii) Using the concept of harmonic function.	**15**
UNIT – 3	
Complex integration: Complex integration - Definition, Line integral, properties and problems. Cauchy's Integral theorem – proof using Green's theorem - direct consequences. Cauchy's Integral formula with proof- Cauchy's generalized formula for the derivatives with proof and applications for evaluation of simple line integrals. Cauchy's inequality – Proof, Livouville's theorem – Proof.	**15**

UNIT – 4	
Transformations : Definition, Jacobian of a transformation –Identity transformation – Reflection – Translation – Rotation and Magnification - Inversion - Inverse points - Linear transformation – Definitions - Bilinear transformations - Cross-ratio of four points – Cross –ratio preserving property – Preservation of the family of straight lines and circles – Conformal mappings – Discussion of the transformations $w = z^2, w = sinz, w = cosz, w = e^z, w = \frac{z+\bar{z}}{2}$ etc	**15**

Books for References:

1. Ajit Kumr and S. Kumaresan - A Basic Course in Real Analysis, Taylor and Francis Group.
2. Bruce P. Palka , Introduction to the Theory, of Function of a Complex Variable, Springer
3. L.V.Ahlfors, Complex Analysis, 3rd Edition, Mc Graw Hill Education
4. Richard R Goldberg, Methods of Real Analysis, Oxford and IBH Publishing
5. R.V.Churchil & J.W.Brown, Complex Variables and Applications, 5th ed, Mc Graw Hill Companies.
6. Shanthinarayan, Theory of Functions of a Complex Variable, S.Chand Publishers.
7. Serge Lang, Complex Analysis, Springer
8. S.C.Malik and Savita Arora, Mathematical Analysis, 5th h ed. New Delhi, India: New Age international(P) Ltd., 2017.
9. S.C.Malik, Principles of Real Analysis, New Age International(India) Pvt. Ltd., 4th Edition, 2018.
10. S.Ponnuswamy, Foundations of Complex Analysis, 2nd Edition, Alpha Science International Limited.

Mathematics Weblinks:

1. http://scienceworld.wolfram.com/biography/topics/Mathematicians.html
2. http://teachers.sduhsd.k12.ca.us/abrown/index2.html
3. http://www.maths.tcd.ie/pub/HistMath/People/RBallHist.html
4. http://www.geometry.net/math.html
5. http://www-history.mcs.st-andrews.ac.uk/history/Indexes/Full_Alph.html
6. http://mathforum.org
7. http://www.cut-the-knot.org
8. http://nrich.maths.org
9. http://archives.math.utk.edu/
10. http://www-groups.dcs.st-and.ac.uk/~history/
11. http://www.maa.org/
12. http://e-math.ams.org/
13. Website on Books in Mathematics

Practical/Lab Work to be performed in Mathematics Lab (FOSS)
Suggested Software's:

Maxima/Scilab /Python/R.

Introduction to the software and commands related to the topic.

1. Program to check whether a given set of real numbers attains supremum or infimum.
2. Program to find upper and lower Riemann sums with respect to given partition.
3. Program to test Riemann Integrability.
4. Program to evaluate Riemann integral as a limit of sum.
5. Program on verification of Cauchy – Riemann equations(Cartesian form) or test for analyticity.
6. Program on verification of Cauchy – Riemann equations(Polar form) or test for analyticity.
7. Program to check whether a function is harmonic or not.
8. Program to construct analytic functions (through Milne – Thomson method).
9. Program to find cross ration of points and related aspects .
10. Program to find fixed points of bilinear transformations.
11. Program to verify De-Moivre's theorem.

Note: Student has to execute a minimum of 8 programs in each part to complete the Lab course.

Course Articulation Matrix - 232539												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO 1	3	3	-	1	1	2	1	1	2	1	1	3
CO 2	3	2	1	-	1	1	1	1	2	1	1	3
CO 3	3	3	1	1	1	2	1	1	2	1	1	3
CO 4	3	3	1	1	1	2	1	1	2	1	1	3
Weighted Average	**3**	**2.75**	**1**	**1**	**1**	**1.75**	**1**	**1**	**2**	**1**	**1**	**3**

DSC(6) Mathematics Syllabus for B.Sc. Mathematics

(Basic and Honors)

Semester V

Course Code: 232540	**Course Title:** DSC(6) : Advanced algebra and Discrete Mathematics DSC(6) Lab : Theory based Practical's on Advanced algebra and Discrete Mathematics
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Identify and analyze different algebraic structure such as rings , fields integral domain and so on.

CO 2: Explore the relation between polynomial rings and homomorphism. Compute GCD of polynomials, irreducibility of polynomials and so on.

CO 3 : Analyze vectors and scalars with the operators Gradient, Divergence and Curl.

CO 4 : Compute various types of graph with its properties.

Course Content

Content	Hours
UNIT – 1	
Rings and Fields: Rings - definition and properties of rings - integral domains – Fields –theorems and problems, Sub rings - Criterion for sub rings- theorems and problems on sub rings, Ideals - Algebra of Ideals - theorems – Principal ideals – examples and standard properties following the definition, Divisibility in an integral domain - theorems and problems, Units and Associates - theorems and problems. Quotient rings - examples and theorems -The field of quotients – theorems and problems.	**15**
UNIT – 2	
Polynomial rings and Homomorphism: Homomorphism - Definitions and example, Kernel of a homomorphism - examples and related theorems. Isomorphism of a ring - examples and related theorems. Automorphism - problems. Fundamental Theorem of Homomorphism of Rings, Prime and Maximal ideals in a commutative ring - definition and examples. Polynomials over rings and fields (some standard properties). Division algorithm (proof and problems), Greatest common divisor - Euclidian algorithm (problems); reducible and irreducible polynomials over fields (definition and problems): Eisenstein's criteria for reducibility - problems; Rational roots of a polynomial - Test – problems.	**15**
UNIT – 3	
Vector algebra: Vectors – Scalars – Vector Field –Scalar field (definition and problems); - Vector differentiation - The vector differential operator Gradient - Divergence - Curl – Standard derivations - vector integration , Green's theorem in plane (definition and problems).	**15**
UNIT – 4	
Basics of Graph theory: Basic definitions, Isomorphism, Subgraphs, Operations on Graphs, Walks, Paths, circuits. Connected and disconnected graphs, Euler graphs, Hamiltonian graph ,some applications. Trees basic properties, Distance, Eccentricity, center, Spanning trees, Minimal Spanning tree.	**15**

Books for References:

1. C.L. Liu (200),Elements of Discrete Mathematics, Tata McGraw-Hill.
2. Frank Harary(1969), Graph Theory, Addison – Wesley Pub.Company.
3. Hari Kishan and Shiv Raj Pundir (2015), Discrete Mathematics, Pragathi Prakashan, 10th ed.
4. I N Herstein (1990), Topics in Algebra, 2nd Edition, Wiley Eastern Ltd., NewDelhi.
5. Joseph A, Gallian (2021), Contemporary Abstract Algebra, 10th ed., Taylor and Francis Group.
6. Kenneth H. Rossen, Discrete Mathematics and its Applications, Mc-Graw Hill, 8th ed.,2021.
7. Michael Artin (2015), Algebra, 2nd ed., Pearson.
8. Murray R Spiegel – Theory and problems of vector calculus.
9. N. Deo (1990), Graph Theory: Prentice, Hall of India Pvt. Ltd. NewDelhi.
10. Shanthinarayan and J N Kapur – A text book of Vector calculus.
11. Vijay K Khanna and S K Bhambri (1998), A Course in Abstract Algebra, Vikas Publications.
12. W D Wallis (2017), A Beginner's Guide to Discrete Mathematics for Computer Scicnce, Wiley Publishers.

Practical/Lab Work to be performed in Mathematics Lab (FOSS)
Suggested Software's:

Maxima/Scilab /Python/R.

Introduction to the software and commands related to the topic.

1. (i) To Verify the given Ring is Commutative or not.
   (ii) To check the Presence of the Unity element in the Ring.
2. (i) To Verify the given Ring is a Field / Integral Domain or not.
   (ii) To Verify given set is a Subring of a Ring or not.
3. To Verify given function is a homomorphism or not.
4. (i) To verify the given polynomial is reducible or irreducible.
   (ii) To find the zeros of the given polynomial.
5. To find the G.C.D of any two polynomials.
6. (i) To find the Units of the given ring.
   (ii) To verify the given elements are Associates or not.
7. Maxima program to obtain some standard graphs.
8. Create a graph of your choice and Obtain random graph..
9. Obtain Induced subgraph and minimum spanning tree.
10. To check the given graphs are isomorphic or not.
11. Obtain degree of each vertex, distance between vertices and eccentricity of vertices and radius and diameter of the graph.
12. Operation on graphs: Product of graphs.
13. Maximum/Minimum degree vertices of the graph G and a vertex of maximum/minimum degree.

Course Articulation Matrix - 232540

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	1	1	1	2	1	1	2	1	1	2
CO 2	3	3	1	2	1	2	1	1	2	1	1	2
CO 3	3	2	1	2	1	1	1	1	2	1	1	2
CO 4	3	2	1	2	1	2	1	1	2	1	1	2
Weighted Average	**3**	**2.5**	**1**	**1.75**	**1**	**1.75**	**1**	**1**	**2**	**1**	**1**	**2**

SEC(1) - Mathematics Syllabus for B.Sc. Mathematics

(Basic and Honors)

Semester V

Course Code: 23EMPMAT01	**Course Title:** SEC(1): Programming with Python (Theory and Practical)
Course Credits: 03	**Hours of Teaching/Week:** 04 (Theory)
Total Contact Hours: 30 Hours (Theory) 30 Hours (Practical)	**Formative Assessment Marks:** 20 (Theory) 25 (Practical)
Exam Duration: 1 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 30 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Examine and Develop solution for polynomial equations, linear equation and problems based on Ages.

CO 2: Evaluate the problems on Area, Volume and Surface area for some conic sections.

CO 3: Analysis of Direction test, Relation test and seating puzzles using various techniques.

Course Content	
Content	Hours
UNIT – 1	
Introduction, Basics and Program flow: Python character set, Tokens, variables and assignments, print statement, comments, Python data structure and data types, string operation in Python, simple input and output, range function, iteration/ looping statements, string and list manipulation, tuples, dictionaries, sorting techniques.	**15**
UNIT – 2	
Functions, libraries and File handling: Understanding and creating your own functions, Function parameters, flow of execution in a function call, passing parameters, returning values from functions, scope of a function, importing modules in a python, using standard library functions and modules, creating a python library, data files, operating and closing files, working with text files, standard, input, output and error streams, working with binary and CSV files.	**15**
UNIT – 3	
Practicasl Implementation of Python. 1. Write python programs using the concept of control structures. 2. Implement python programs using functions and strings. 3. Implement methods to create and manipulate lists, tuples and dictionaries. 4. Apply the concept of file handling and reg Ex using packages. 5. Illustrate the working of scraping websites with CSV.	**30**

Reference Books:

1. Automate the Boring Stuff with Python - AISweigart,William Pollock,2015.
2. Basic Python programming for Beginners - Varada rajkumar, Marapalli Krishna, Jayprakash, Blue rose Publishers, 2022.
3. Learning Python - MarkLutz, O' Reilly Media, Paperback, 2nd edition, 2020.
4. Programming and problem solving through Python- Sathish jain and Shashisingh, BPB Publications, 2020.
5. Python Cook Book – David Beazely and Brain K. Jones, 2022.
6. Python – John Shovic and Alan Simpson, Paperback, 2020.

Course Articulation Matrix - 23EMPMAT01

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	3	1	2	1	1	1	1	1	1	1	2
CO 2	2	3	1	2	1	3	1	1	1	1	1	3
CO 3	2	3	1	2	1	2	1	1	1	1	1	2
Weighted Average	**2**	**3**	**1**	**2**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**2.33**

DSC(7) Mathematics Syllabus for B.Sc. Mathematics

(Basic and Honors)

Semester: VI

Course Code: 232639	**Course Title:** DSC(7) : Linear Algebra DSC(7) Lab :Theory based Practical's on Linear Algebra
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 : Analyzing and applying the concepts of Vector spaces , subspaces , basis, dimension and their properties.

CO2 : Applying the concept of Eigen values and Eigen vectors, minimal polynomials, linear transformations etc.

CO3 : Determine properties of inner product spaces and orthogonality in inner product space and vector space.

CO4 : Realize importance of adjoint of a linear transformation and its canonical form.

Course Content

Content	Hours
UNIT – 1	
Vector spaces: Vector spaces - Definition, examples and properties; Subspaces - Examples, criterion for a subspace and some properties; Linear Combination – Linear span, Linear dependence and Linear independence. Basic properties of linear dependence and independence, techniques of determining linear dependence and independence in various vector spaces and related problems; Basis and dimension – Co-ordinates, ordered basis, some basic properties of basis and dimension and subspace spanned by given set of vectors; Quotient space- theorems and examples.	**15**
UNIT – 2	
Linear Transformations: Linear transformation - Definition, examples, equivalent criteria, some basic properties and matrix representation, change of basis and effect on associated matrix, similar matrices; Rank-Nullity theorem –Null space , Range space, proof of rank nullity theorem and related problems.	**15**
UNIT – 3	
Isomorphism, Eigen values and Diagonalization: Homomorphism, Isomorphism and automorphism - Examples, order of automorphism and Fundamental theorem of homomorphism; Eigen values and Eigen vectors -Computation of Eigen values, algebraic multiplicity, some basic properties of eigen values, determination of eigen vectors and eigen space and geometric multiplicity. Diagonalizability of linear transfomation- Meaning, condition based on algebraic and geometric multiplicity (mentioning) and related problems (Only verification of diagonalizability).	**15**
UNIT – 4	
Invertible Transformation and Inner Product spaces: Invertible trasnsformaion - some basic properties of invertible , singular and non singular transformations and conditions of existence of inverses; Minimal polynomial of a transformation, Relation between characteristic and minimal polynomials and related problems. Inner product and normed linear spaces - Definitions, examples, Cauchy – Schwartz inequality (with proof) and related problems; Gram - Schmidt orthogonalization - Orthogonal vectors, orthogonal basis, Gram - Schmidt orthogonalization process: both proof and problems.	**15**

Books for References:

1. F. M. Stewart, Introduction to linear Algebra, Dover Publications.
2. Gilbert. Strang (2015), Linear Algebra and its applications, (2nd Edition), Elsevier.
3. I. N. Herstein, Topics in Algebra, 2nd Edition, Wiley.
4. Kenneth Hoffman & Ray Kunze (2015), Linear Algebra, (2nd Edition) , Prentice Hall India Leaning Private Limited.
5. Serge Lang(2005), Introduction to Linear Algebra (2nd Edition), Springer lndia.
6. S. Kumaresan, Linear Algebra, Prentice Hall India Learning Private Limited.
7. Stephen H. Friedberg, Arnold J. Insel & Lawrence E.Spence (2003), Linear Algebra (4th Edition), Printice - Hall of India Pvt. Ltd.
8. T. K. Manicavasagam Pillai and K S Narayanan, Modern Algebra Volume2.
9. Vivek Sahai & Vikas Bist (2013), Linear Algebra (2nd Edition) Narosa Publishing.

Mathematics Weblinks:

1. http://scienceworld.wolfram.com/biography/topics/Mathematicians.html
2. http://teachers.sduhsd.k12.ca.us/abrown/index2.html
3. http://www.maths.tcd.ie/pub/HistMath/People/RBallHist.html
4. http://www.geometry.net/math.html
5. http://www-history.mcs.st-andrews.ac.uk/history/Indexes/Full_Alph.html
6. http://mathforum.org
7. http://www.cut-the-knot.org
8. http://nrich.maths.org
9. http://archives.math.utk.edu/
10. http://www-groups.dcs.st-and.ac.uk/~history/
11. http://www.maa.org/
12. http://e-math.ams.org/
13. Website on Books in Mathematics

Practical/Lab Work to be performed in Mathematics Lab (FOSS)
Suggested Software's:

Maxima/Scilab /Python/R.

Introduction to the software and commands related to the topic.

1. Program on linear combination of vectors.
2. Program to verify linear dependence and independence.
3. Program to find basis and dimension of the subspaces.
4. Program to verify the function is linear transformation or not.
5. Program to find the matrix of linear transformation.
6. Program to find the Eigen values and Eigen vectors of a given linear transformation.
7. Program on Rank – nullity theorem.
8. Program to verify if the given linear transformation is singular / non-singular.
9. Program to find the minimal polynomial of given transformation.
10. Program to find the algebraic multiplicity of the Eigen values of the given linear transformation.
11. Program on diagonalization.

Note: Student has to execute a minimum of 8 programs in each part to complete the Lab course.

Course Articulation Matrix – 232639

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	1	1	1	1	1	1	1	1	1	2
CO 2	3	3	1	1	1	1	1	1	1	1	1	2
CO 3	3	3	1	1	1	1	1	1	1	1	1	2
CO 4	3	3	1	1	1	1	1	1	1	1	1	2
Weighted Average	**3**	**3**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**2**

DSC(8) Mathematics Syllabus for B.Sc. Mathematics

(Basic and Honors)

Semester: VI

Course Code: 232640	**Course Title:** DSC(8) : Numerical Analysis DSC(8) Lab :Theory based Practical's on Numerical Analysis
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2 ½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1: Evaluate various operators arising in numerical analysis such as difference operators, shift operators and so on.

CO2: Various techniques of numerical analysis such as in finding roots , integrals and derivatives.

CO3: Apply the rules of calculus and other areas of mathematics in justifying the techniques of numerical analysis.

CO4: Applicability of techniques of numerical analysis in solving real life problems modified to improve the accuracy.

Course Content	
Content	Hours
UNIT – 1	
Algebraic and Transcendental Equations : Errors – Significant digits, absolute, relative, percentage errors, rounding off and truncation errors (meanings and related problems), general error formula (derivation of formula and problems based on it), error in series approximation: Taylor series approximations (problems only), Solutions to algebraic and transcendental equations – Bisection method, Regular - Falsi method, iterative method Newton - Raphson method and secant method (Plain discussion of the rational behind techniques and problems on their applications).	**15**
UNIT – 2	
System of Linear Algebraic Equations : Direct Methods - Gauss elimination method, Gauss - Jordan elimination method and Tringularization method; Iterative methods – Jacobi method, Gauss – Jacobi method, Gauss- Seidal method, Successive – Over Relaxation (SOR) method.	**15**
UNIT – 3	
Polynomial Interpolations : Finite differences , Forward, backward and central differences and shift operators; definitions , properties and problems; Polynomial interpolation – Newton – Gregory forward and backward interpolation formulas, Gauss's Forward and backward interpolation formulas, Lagrange interpolation polynomial , Newton's divided differences and Newton's general interpolation formula (Discussion on setting up the polynomials, differences between them and problems on their applications).	**15**
UNIT – 4	
Numerical Differentiation and Integration : Formula for derivatives (till second order) based on Newton – Gregory forward and backward interpolations (Derivations and problems based on them). Numerical Integration - General quadrature formula, Trapezoidal rule, Simpson's 1/3 rule, Simpson's 3/8 rule and Weddell's rule (derivations for only general quadrature formula, trapezoidal rule and Simpson's $1/3^{rd}$ rule and problems on the applications of all formulas).	**15**

Books for References:

1. E. Isaacson and H.B.Keller, Analysis of Numerical methods, Dover Publications.
2. S.S. Sastry, Introductory methods of Numerical Analysis, 5th Edition, PHI Learning Private Limited.
3. E Kreyszig, Advanced Engineering Mathematics, Wiley India Pvt. Limited.
4. B.S. Grewal, Numerical Methods for Scientists and Engineers, Khanna Publishers.
5. M.K. Jain, S.R.K. Iyengar and R.K.Jain, Numerical Methods for Scientific and Engineering computation, 4th Edition, New Age International
6. H.C.Saxena, Finite Difference and Numerical Analysis, S.Chand Publishers
7. B.D. Gupta, Numerical Analysis, Konark Publishers Pvt. Ltd.

Practical/Lab Work to be performed in Mathematics Lab (FOSS) Suggested Software's:

Maxima/Scilab /Python/R.

Introduction to the software and commands related to the topic.

1. Program to find root of an equation using Bisection and Regular – Falsi methods.
2. Program to find root of an equation using Newton – Raphson and Secant methods.
3. Program to solve system of algebraic equations using Gauss – Elimination method.
4. Program to solve system of algebraic equation using Gauss – Jordan method.
5. Program to solve system of algebraic equation using Gauss – Jacobi method.
6. Program to solve system of algebraic equation using Gauss – Seidel method.
7. Program to solve system of algebraic equation using SOR method.
8. Program to evaluate integral using Simpson's 1/3 and 3/8 rules.
9. Program to evaluate integral using Trapezoidal and Weddle rules.
10. Program to find the sums of powers of successive natural numbers using Newton – Gregory technique.
11. Program to find differentiation at specified point using Newton – Gregory interpolation method.
12. Program to find the missing values of table using Lagrange method.

Course Articulation Matrix – 232640

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	3	1	2	1	2	1	1	1	1	1	2
CO 2	2	3	1	2	1	2	1	1	1	1	1	2
CO 3	3	3	1	2	1	2	1	1	1	1	1	2
CO 4	3	3	1	2	1	2	1	1	1	1	1	2
Weighted Average	**2.5**	**3**	**1**	**2**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**2**

SEC(2) - Internship

Semester: VI

Course Code: 23INTMAT01	**Course Title:** SEC(2) **-** Internship
Course Credits: 02	**Hours of Teaching/Week:**
Total Contact Hours: 90 Hours Internship	**Formative Assessment Marks:** 25 Marks
Exam Duration: 3 Hours (Presentation)	**Semester End Examination Marks:** 25 Marks

Note: This course will run as per the guidelines defined by the Bos Mathematics, University of Mysore, Mysuru and the same is approved by BoS, Mathematics SBRR Mahajana First Grade College, Mysuru.

Course Outcomes (COs):

CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.

CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

Course Articulation Matrix – 23INTMAT01

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	-	-	1	3	3	2	2
CO 2	3	3	3	3	3	2	1	1	3	3	2	2
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**1**	**1**	**3**	**3**	**2**	**2**

Continuous Formative Evaluation/Internal Assessment (DSC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance(the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of manual work, programme and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

• The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

C1 Component: 10 Marks : This will be based on a practical test. This should be completed by the 8th week of the semester.

C2 Component : 15 Marks : This will be based on practical test / assignment for 10 marks and 5 marks for practical record. This should be completed by the 16th week of the semester.

• The student is evaluated for 25 marks in **C3** as per the following scheme:

Assessment Criteria	**Marks**
For each Experiment Manual work – 04 Marks Program writing – 04 Marks Execution – 02 Marks	$10 \times 2 = 20$
Viva	05
Total	**25**

Continuous Formative Evaluation/Internal Assessment (SEC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 20:30 for IA and Semester End Theory Examinations respectively and 25:25 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	50 Marks	50 Marks
Continuous Assessment – 1 (C1)	10 Marks	10 Marks
Continuous Assessment – 2 (C2)	10Marks	15 Marks
Semester End Examination (C3)	30 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	10	-	10
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	10	10
Total	10	10	20

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance(the marks is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations (SEC)

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of manual work, programme and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

• The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

C1 Component: 10 Marks : This will be based on a practical test. This should be completed by the 8th week of the semester.

C2 Component : 15 Marks : This will be based on practical test / assignment for 10 marks and 5 marks for practical record. This should be completed by the 16th week of the semester.

• The student is evaluated for 25 marks in **C3** as per the following scheme:

Assessment Criteria	Marks
For each Experiment Manual work – 04 Marks Program writing – 04 Marks Execution – 02 Marks	$10 \times 2 = 20$
Viva	05
Total	**25**

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. For C3, the report has to be certified by the Head of the Department and the Mentor/Supervisor.

• **The student is evaluated for 25 marks in C1 and C2 as per the following scheme:**

Project Progress Presentation (**C1**): 10 marks

Project Progress Presentation (**C2**): 10 marks + Report: 05 marks = 15 marks

• **The student is evaluated for 25 marks in C3 as per the following scheme:**

Assessment Criteria	Marks
Project Presentation Skills	05
Project Development Skills	10
Viva Voce	10
Total	**25**

DSC Theory Question Paper Pattern

Max. Marks: 60 Marks **Exam Duration:** 2 ½ Hours

Instructions: Paper Setting

- The Question Paper is divided into 2 parts: Part - A and Part – B.
- **Part – A** : Should consist of **08 Questions** (2 Questions from each Unit).
  6 Questions to be answered.
- **Part – B** : Should consist of **4 Main** Questions (1 from Each Unit).
  5 Sub Question will be given, out of which **3 Questions** to be answered.

Part A

Answer any six questions. Each Question carries 2 Marks. 6×2 =12

I. a.
b.
.
.
h

Part B

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

II. a.
b.
c.
d.
e.

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

III a.
b.
c.
d.
e.

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

IV a.
b.
c.
d.
e.

Answer any three questions. Each Question carries 4 Marks. 3×4 =12

V a.
b.
c.
d.
e.

SEC Theory Question Paper Pattern

Max. Marks: 30 Marks **Exam Duration:** 1 ½ Hours

Instructions: Paper Setting

- The Question Paper Consist of **2 Main** Questions (1 from Each Unit). **5 Sub Question** will be given, out of which **3 Questions** to be answer

Answer any three questions. Each Question carries 5 Marks. 3×5 =15

I. a.
b.
c.
d.
e.

Answer any three questions. Each Question carries 5 Marks. 3×5 =15

II a.
b.
c.
d.
e.

B.Sc (Mathematics) NEP Syllabus 2023 - 2024

Board of Studies

Sl. No.	Name and address	Designation	Signature
1	Dr. Sumathi M P HoD, Dept of Mathematics SBRR Mahajana First Grade College, Mysuru Mob. 9880810618 sumathimp.fgc@mahajana.edu.in	Chairperson	Sumathi.MP
2	Prof. R Rangarajan Professor , DOS in Mathematics Manasagangothri, Mysuru Mob. 9611109079 ranga@maths.uni-mysore.ac.in	Member	R.Rangarajan
3	Dr Sudha T G Associate Professor, Dept of Mathematics Nrupathunga University (Govt. Science College Autonomous) Nrupathunga Road,Bengaluru-560001 Mob. 9535056766 tgsudha65@gmail.com	Member	Sudha.T.G. 7/9/23
4	Dr. Jagadeesh R Assistant Professor, Dept of Mathematics Government First Grade college Ramanagar Mob.9448268140 jagadeeshr1978@gmail.com	Member	Jagadeesh R 7/9/23
5	Niranjan L Assistant Professor SBRR Mahajana First Grade Mysuru, Mob: 9108257072 niranjankavi.np@gmail.com	Member	7/9/23
6	Harshavardhana C N Assistant Professor Govt First Grade college for Women, Holenarasipura. Mob. 8971876885 cnhmaths@gmail.com	Member	07/09/23

Sumathi.M.A
Chairperson
BOS/BOE in Mathematics
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru

SBRR Mahajana First Grade College (Autonomous), Jayalakshmipuram , Mysuru

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BOARD OF STUDIES (BoS)

DEPARTMENT OF MICROBIOLOGY

UG ☐

PG ☐

NEP Syllabi for I and II Semester B.Sc.

Microbiology

2021- 22

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DEPARTMENT OF MICROBIOLOGY

Motto

Impart benefit to the society

Vision

To provide innovative research expertise

Mission

To expand the knowledge of scientific field research

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Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis – Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions – Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research – Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5: Use of Modern Techniques/Tools – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO 6: Impact of Science on Society – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO 7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO 8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO 9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning

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skills.

PO 12: Life- long Learning – Engage in the art of self- directed learning.

Board of Studies

Sl. No.	Category	Name and Designation	Address for Communication	e- Mail & Mobile number
1	Chairperson	Smt. Shruthi Prakash H P Assistant Professor & HoD	Department of Microbiology, SBRR Mahajana First Grade College, Mysuru - 12	shruthiprakashhp.fgc@mahajana.edu.in 9731468085
2	Member	Ms. Spandana N Assistant Professor		spandanar.fgc@mahajana.edu.in 9449680239
3		Smt. Sangeetha K P Assistant Professor		sangeethasangeethakp@gmail.com 8431254737
4	Two Experts from Other University	Dr. Jamuna Bai A Assistant Professor	Department of Microbiology, Faculty of life Sciences, JSS – Academy of Higher Education and Research, Mysuru - 570004	jamunabhounsle@gmail.com 9480278098
5		Dr. Sindhu R Assistant Professor		sindhur@jssuni,edu.in 9986297935
6	Nominee by the Vice Chancellor	Dr. Sreenivasa M Y Professor	DOS in Microbiology, UOM, Manasagangotri, Mysuru - 570005	sreenivasamy@gmail.com 9449054480
7	One Person from Industry/ Corporate	Smt. Sushrutha Assistant Manager	Zeus Biotech Limited, Metagalli, Mysuru - 570016	sushruthazeus@gmail.com 8971703690

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	Sector/Allied Area			
8	Alumnus	Dr. Chaitra Narayan Founder	Codagu Agritech - Eco, Plot no. 24/3 and 24/4, KIADB, Industrial area, kudlur PB #58, Kushalnagar - 571234	codagu.agritech.giu@gmail.com 9886299801

Year- wise Structure (NEP 2020): Microbiology

Discipline Specific Courses (DSC) and Open Elective (OE)

I Year

Course Type, Code and Title		Hours / Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		Marks
Microbiology – I Semester									
212179	**DSC (1) -** General Microbiology	4	0	4:0:2 (6 Credits)	20	20	60	2½ Hours	150
	DSC (1) Lab - General Microbiology Lab	0	4		10	15	25	3 Hours	
OE (1)	Microbial Technology for Human Welfare **21OEMIB101**	3	0	3:0:0 (3 Credits)	20	20	60	2½ Hours	100
Microbiology – II Semester									
212279	**DSC (2) -** Microbial Biochemistry And Physiology	4	0	4:0:2 (6	20	20	60	2½ Hours	150

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	DSC (2)Lab - Microbial Biochemistry And Physiology Lab	0	4	**Credits)**	10	15	25	3 Hours	
OE(2)	Environmental and Sanitary Microbiology **21OEMIB201**	3	0	3:0:0 **(3 Credits)**	20	20	60	2½ Hours	100

DSC (1) Syllabus for B.Sc. Microbiology (Basic and Honors)

Semester I

Course Code: 212179	**Course Title:** General Microbiology (Theory) General Microbiology Lab (Practical)
Course Credits (L:T:P) : 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Acquisition of concepts of microbiology.
CO 2: Professional skills in handling microbes.
CO 3: Thorough applications of good laboratory and good manufacturing practices in microbial quality control.
CO 4: Reviewing the structural organization and reproduction of microorganisms.

Course Content

Content	**Hours**
UNIT – 1 Historical development, major contributions, origin of microorganisms and	

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microscopy	
Historical development of microbiology - Theory of spontaneous generation, Biogenesis and Abiogenesis. Contributions of Anton Von Leeuwenhoek, Louis Pasteur, Robert Koch, Joseph Lister and Edward Jenner, Alexander Fleming, Martinus Beijerinck, Elie Metchnikoff. Contributions of Indian scientists in the field of Microbiology. Branches of Microbiology, **Microcopy**- working principle, construction and operation of simple, compound microscopes.	14
UNIT – 2: Staining, sterilization and preservation of microorganisms	
Staining: Nature of stains, principles, mechanism, methods and types of staining- Simple, Differential- Gram staining, Acid fast staining, Structural staining of capsule, cell wall, endospore. **Sterilization:** Principles, types and techniques, Physical and chemical methods. Preservation of microorganisms: Methods of preservation of microorganisms; slant culture, stab culture, soil culture, mineral oil overlaying, glycerol preservation.	14
UNIT - 3: Types, structure, organization and reproduction of prokaryotic microorganism	
Overview of Prokaryotic Cell Structure: Size, shape, arrangement. Diagram of Prokaryotic cell organization, cell wall structure of Gram positive and negative bacteria, cell membrane; Cytoplasmic matrix- Cytoskeleton, ribosome, inclusion granules: Composition and function. **Nuclear Materials** – Bacterial chromosomes structure (its differences with the Eukaryotic chromosome); Extra Chromosomal materials. Components external to cell wall- capsule, slime, s- layer, pili, fimbriae, flagella; structure, motility, chemotaxis. **Bacterial Endospore** - Examples of endospore forming organisms, habitats, function, formation and germination. Reproduction in bacteria and bacterial cell cycle.	14
UNIT - 4: Types, structure, organization and reproduction of eukaryotic microorganisms	
Over view of eukaryotic cell structure: General structure and types of cells; External cell Coverings and cell membrane. Structure and function of Cytoplasmic matrix. **cytoskeleton:** Structure and function; single Membrane organelles- Endoplasmic reticulum, Golgi complex, Lysosomes, Vesicles and Ribosomes; Double Membrane organelles- Nucleus, **Mitochondrion and Chloroplast**: Structure and Functions; Peroxisomes; Organelles of motility Structure and movement of flagella and cilia.	14

References:

1. Prescott, Harley, Klein' s Microbiology, J.M. Willey, L.M. Sherwood, C.J. Woolverton, 7th International, edition 2008, McGraw Hill.
2. Foundations in Microbiology, K. P. Talaro, 7th International edition 2009, McGraw Hill.
3. A Textbook of Microbiology, R. C. Dubey and D. K. Maheshwari, 1st edition, 1999, S. Chand & Company Ltd.
4. Brock Biology of Microorganisms, M.T.Madigan, J.M.Martinko, P. V. Dunlap, D. P. Clark- 12th edition, Pearson International edition 2009, Pearson Benjamin Cummings.
5. Microbiology – An Introduction, G. J.Tortora, B. R.Funke, C. L. Case, 10th ed. 2008,Pearson Education.

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6. General Microbiology, Stanier, Ingraham et al, 4th and 5th edition 1987, Macmillan education limited.
7. Microbiology- Concepts and Applications, Pelczar Jr,Chan, Krieg, International ed, McGraw Hill.
8. Black, J.G. 2008. Microbiology principles and explorations. 7edn. John Wiley and Sons Inc., New Jersey 846 pp.

Weblinks:

1. https://www.britannica.com/science/microbiology
2. http://cattheni.edu.in/wp- content/uploads/2018/09/3.Staining- and- Sterilization- Techniques.pdf
3. https://courses.lumenlearning.com/suny- wmopen- biology2/chapter/the- structure- of - prokaryotes/
4. https://openstax.org/books/microbiology/pages/3- 4- unique- characteristics- of- eukaryotic- cells

DSC (1): Practical
General Microbiology

(4Hrs/week) 2 Credits

1. Microbiological laboratory standards and safety protocols.
2 & 3. Operation and working principles of light and compound microscope.
4. Working principles and operations of basic equipments of microbiological

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laboratory

(Autoclave, Hot Air Oven, Incubator, Laminar air flow chamber).

5. Applications of basic microbiological tools (Pipettes, Micropipette, Bunsen burner, Inoculation

loop, Inoculation needle).

6&7. Demonstration and observations of microorganisms under compound microscope (Algae, and

Cyanobacteria)

8. Demonstration of bacterial motility by hanging drop method.

9. Positive staining.

10. Negative staining.

11. Differential staining - Gram staining.

12. Bacterial endospore staining.

13. Staining of fungi by Lactophenol cotton blue.

14. &15. Microscopic measurement of microorganisms/spores using stage and ocular micrometer

Course Articulation Matrix – 212179

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	2	2	-	2	1	-	-	1	-	2
CO 2	2	2	2	2	-	2	2	-	-	1	-	2
CO 3	1	2	2	2	-	2	2	-	-	1	-	2
CO 4	2	2	2	2	-	-	-	-	-	1	-	2
Weighted Average	1.75	2	2	2	-	2	1.66	-	-	1	-	2

OE (1) Microbiology Syllabus for All Programs (Except

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Semester I

Course Code: 21OEMIB101	**Course Title:** Microbial Technology for Human Welfare
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Acquire information about Fermentation Microbial Technology.
CO 2: Considerate broader goals of Agricultural Microbiology.
CO 3: Appreciate the comprehension of antibiotic therapy, drugs and Vaccines.

Course Content

Content	Hours
UNIT – 1 Food and Fermentation Microbial Technology	
Fermented Foods – Types, Nutritional Values, Health Benefits- Prebiotics, Probiotics, Synbiotics and Nutraceutical Foods. **Fermented Products** – Alcoholic and nonalcoholic beverages, fermented dairy products, Fruit fermented drinks.	14
UNIT – 2 Agricultural Microbial Technology	
Microbial Fertilizers, Microbial Pesticides, Microbial Herbicides, Mushroom Cultivation and its nutritional value, Biogas Production.	14
UNIT – 3 Pharmaceutical Microbial Technology	
Microbial Drugs – General Characteristics and Development of Drug Resistance. Antibiotics – Types, Functions and Antibiotic Therapy, Vaccines – Types, Properties, Functions and Schedules.	14

References:

1. Prescott, Harley, Klein' s Microbiology, J.M. Willey, L.M. Sherwood, C.J. Woolverton, 7th International, edition 2008, McGraw Hill.
2. Brock Biology of Microorganisms, M.T.Madigan, J.M.Martinko, P. V. Dunlap, D. P. Clark- 12th edition, Pearson International edition 2009, Pearson Benjamin Cummings.
3. Microbiology – An Introduction, G. J.Tortora, B. R.Funke, C. L. Case, 10th ed. 2008,Pearson Education.
4. Schlegel, H.G. 1995.General Microbiology. Cambridge University Press, Cambridge, 655 pp.

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1. https://www.frontiersin.org/articles/10.3389/fpls.2015.00659/full
2. https://www.who.int/health- topics/vaccines- and- immunization#tab=tab_1
3. https://www.healthline.com/nutrition/8- fermented- foods

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Course Articulation Matrix – 21OEMIB101

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	1	-	-	2	2	-	-	1	-	1
CO 2	2	1	1	-	1	2	2	-	-	1	-	1
CO 3	2	1	1	1	-	2	2	-	-	1	-	1
Weighted Average	2	1	1	1	1	2	2	-	-	1	-	1

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SEC- (1)
Microbiological Methods and Analytical Techniques

Semester I:

Course Code: 212182	**Course Title**: Microbiological Methods and Analytical Techniques
Course Credits (L:T:P): 01 (1:0:0)	**Hours of Teaching/Week:** 1 Hours (Theory)
Total Contact Hours: 14 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Accomplish microbiology and analytical techniques.
CO 2: Acquire broader facts of environment, health, and safety
CO 3: Expertise in professional skills

Course Content:

Content	Hours
Microbiological Methods and Analytical Techniques	
Microbiological Skills Microbiological culture media: Types, Composition, Preparation, Application and storage; Ingredients of media, natural and synthetic media, chemically defined media, complex media, selective, differential, indicator, transport, storage enriched and enrichment media. **Isolation and cultivation of microorganisms:** Collection of samples, processing of samples, serial dilution, technique, inoculation of samples, incubation and observations of microbial colonies. Morphological characterization of microorganisms - Colony characteristics, Microscopic characters, biochemical/physiological tests or properties and identification. Subculturing of microorganisms and pure culture techniques. Preservation of microorganisms. **Advanced Microscopic Skills:** Different types of microscopes - Phase contrast, Bright Field, Dark Field, Fluorescent, Confocal, Scanning and Transmission Electron Microscopy. **Analytical Skills:** Centrifugation, Chromatography and Spectroscopy: Principles, Types, Instrumentation, Operation and applications.	**14**

References:

1. Prescott, Harley, Klein' s Microbiology, J.M. Willey, L.M. Sherwood, C.J. Woolverton, 7th International, edition 2008, McGraw Hill.
2. Foundations in Microbiology, K. P. Talaro, 7th International edition 2009, McGraw Hill.
3. A Textbook of Microbiology, R. C. Dubey and D. K. Maheshwari, 1st edition, 1999, S. Chand & Company Ltd.
4. General Microbiology, Stanier, Ingraham et al, 4th and 5th edition 1987, Macmillan education limited.
5. Microbiology- Concepts and Applications, Pelczar Jr,Chan, Krieg, International ed, McGraw Hill.

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Weblinks:

1. http://cattheni.edu.in/wp- content/uploads/2018/09/3.Staining- and- Sterilization-Techniques.pdf
2. https://courses.lumenlearning.com/suny- wmopen- biology2/chapter/the- structure- of-prokaryotes/
3. https://openstax.org/books/microbiology/pages/3- 4- unique- characteristics- of-eukaryotic- cells

SEC (1) - Practicals
Microbiological Methods and Analytical Techniques

1. Preparation of different microbiological culture media
2. Isolation and cultivation of bacteria, Actinobacteria, fungi and algae
3. Characterization and identification of bacteria, Actinobacteria, fungi and algae – colony characters and microscopic characters
4. Biochemical and physiological tests for identification of bacteria
5. Methods and practices in microbiology lab: MSDS (Material Safety Data Sheet), Good clinical Practices (GCP), Standard Operating Procedure (SOP), Good Laboratory Practices (GLP), Good Manufacturing Practices.
6. Usage and maintenance of basic equipment of microbiology lab: Principles, calibrations, and SOPs of balances (Types), pH meter (Types), Autoclaves (Types), Laminar flows and biosafety cabinets, basic Microscopes, homogenizers, stirrers.
7. Procedures for documentation, lab maintenance, repair reporting
8. Separation of mixtures of biomolecules by paper / thin layer chromatography.
9. Demonstration of column packing in column chromatography.

Course Articulation Matrix - 212182

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	1	1	2	1	1	-	-	1	-	2
CO 2	-	1	1	1	2	1	1	-	-	1	-	2
CO 3	2	1	1	1	2	1	1	-	-	1	-	2
CO 4	2	1	1	1	2	1	1	-	-	1	-	2
Weighted Average	2	1	1	1	2	1	1	-	-	1	-	2

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DSC (2) Syllabus for B.Sc. Microbiology (Basic and Honors)

Semester II

Course Code: 212279	**Course Title:** Microbial Biochemistry and Physiology (Theory) Microbial Biochemistry and Physiology (Practical)
Course Credits (L:T:P) : 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56Hours(Theory) 56 Hours(Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Compare the types of biomolecules, structure, and their functions.
CO 2: Exhibit the skills to perform bioanalytical techniques.
CO 3: Solicit proficiency on microbial growth and nutrition.
CO 4: Acquire broader facts of Microbial respiration and Photosynthesis.

Course Content:

Content	Hours
UNIT - 1 Biochemical Concepts	
Basic Biochemical Concepts: Major elements of life and their primary characteristics, atomic bonds and molecules – bonding properties of carbon, chemical bonds- covalent and non covalent, Hydrogen bonds and Vander Waal Forces. **Biological Solvents:** Structure and properties of water molecule, Water as an universal solvent, polarity, hydrophilic and hydrophobic interactions, properties of water, Acids, bases, electrolytes, hydrogen ion concentration, pH, buffers and physiological buffer system.	14
UNIT - 2 Macromolecules – Types and Properties	
Carbohydrates: Definition, classification, properties and its importance. **Amino acids and proteins**: Definition, classification, properties and importance of amino acids. **Lipids and Fats:** Definition, classification, properties and importance of lipids. **Vitamins**: Definition, properties and importance of chlorophyll, cytochrome and hemoglobin.	14
UNIT – 3 Microbial Physiology	
Microbial Growth: Definition of growth, Growth curve, phases of growth, Influence of environmental factors on growth. Definition of generation time and specific growth rate. Synchronous growth, Continuous growth (chemostat and turbidostat), Diauxic growth. Measurement of Growth: Direct Microscopic count - Haemocytometer; Viable count, Membrane filtration; Electronic Counting; Measurement of cell mass; Turbidity measurements- spectrophotometer techniques. **Microbial Nutrition:** Microbial nutrients, Classification of organisms based on carbon source, energy source and electron source, Macro and micronutrients. Membrane Transport: Types of Cellular transport, Passive, Facilitated, Active, Group Translocation, Ion transduction Na K^+, ATPase.	14

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UNIT – 4 Microbial Physiology- Microbial Respiration, Microbial Photosynthesis	
Microbial Respiration: Respiratory electron transport chain in bacteria, oxidation – reduction reactions, protein translocation, substrate level phosphorylation – inhibitors and mechanism, chemiosmotic coupling. Fermentation reactions (homo and hetero). **Microbial Photosynthesis:** Definition, Photosynthetic microorganisms, Oxygenic and Anoxygenic types, Light harvesting pigments, Apparatus and components of Photosynthesis , Photophosphorylation, CO_2 fixation pathways: Calvin cycle, Reductive TCA pathway.	14

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References:

1. Cohen, Georges N, 2014, Microbial Biochemistry, Springer Netherlands.
2. Felix Franks, 1993; Protein Biotechnology, Humana Press, New Jersey.
3. Stryer L, 1995; Biochemistry, Freeman and Company, New York.
4. Voet & Voet, 1995; Biochemistry, John Wiley and Sons, New York.
5. Nelson and Cox, 2000; Lehninger Principles of Biochemistry, Elsevier Publ.
6. Harper, 1999; Biochemistry, McGraw Hill, New York.
7. Palmer T. (2001), Biochemistry, Biotechnology and Clinical Chemistry, Harwood Publication, Chichester.
8. Boyer R. (2002), Concepts in Biochemistry 2nd Edition, Brook/ Cole, Australia.
9. Moat A. G., Foster J.W. Spector. (2004), Microbial Physiology 4th Edition Panama Book Distributors.

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2. https://www.slideshare.net/tamilsilambarasan/microbial- respiration
3. https://www.nature.com/articles/srep35496
4. https://iubmb.onlinelibrary.wiley.com/doi/10.1002/bmb.20727

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DSC (2): Practical
Microbial Biochemistry and Physiology

(4Hrs/week) 2 Credits

1. Preparation of Physiological Saline and Serial dilution.
2. Study of Photographs (Colorimeter, Photosynthetic apparatus, Colony counter, Membrane filter).
3. Qualitative determination of Carbohydrates.

4&5. Qualitative determination of Proteins and Lipids.

6&7. Determination of bacterial growth by Spectrophotometric method & calculation of generation time.

8 Measurement of growth by cell number using Haemocytometer.

9 Cultivation of Anaerobic microorganisms using Gaspak method.

10 Isolation of microorganisms by Spread plate, Pour plate and Streak plate methods.

11 Effect of Carbon on the growth of the microorganisms.

12 Effect of Nitrogen on the growth of the microorganisms.

13 Effect of pH on bacterial growth.

14 Effect of Salt concentration on bacterial growth.

15 Effect of Temperature on bacterial growth.

Course Articulation Matrix - 212279

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	1	1	2	-	-	-	-	-	2	-	2
CO 2	1	1	1	2	2	-	-	-	-	2	-	2
CO 3	3	1	1	-	2	1	-	-	-	2	-	2
CO 4	3	1	1	-	-	1	-	-	-	2	-	2
Weighted Average	2.5	1	1	-	2	1	-	-	-	2	-	2

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OE (2) Microbiology Syllabus for All Programs (Except Science)

Semester II

Course Code: 21OEMIB201	**Course Title:** Environmental and Sanitary Microbiology
Course Credits : 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Comprehend the concepts of Microbial distribution in the environment.
CO 2: Considerate broader goals of detection and control of microbial contaminants.
CO 3: Impact of microbial infections and diseases on public health.

Course Content

Content	Hours
UNIT – 1 Soil and Air Microbiology	
Soil and Air as a major component of environment. Types and properties of soil and air. Distribution of microorganisms in soil and air. Major types of beneficial and harmful microorganisms in soil and air.	14
UNIT – 2 Water Microbiology	
Water as a major component of environment. Types, properties and uses of water. Microorganisms of different water bodies. Standard qualities of drinking water.	14
UNIT – 3 Sanitary Microbiology	
Public health hygiene and communicable diseases. Survey and surveillance of microbial infections. Airborne microbial infections (Tuberculosis), waterborne microbial infections (Cholera), Food borne microbial infections (Botulism). Epidemiology of microbial infections, their detection and control.	14

References:

1. Prescott, Harley, Klein' s Microbiology, J.M. Willey, L.M. Sherwood, C.J. Woolverton, 7th International, edition 2008, McGraw Hill.
2. A Textbook of Microbiology, R. C. Dubey and D. K. Maheshwari, 1st edition, 1999, S. Chand & Company Ltd.
3. Brock Biology of Microorganisms, M.T.Madigan, J.M.Martinko, P. V. Dunlap, D. P. Clark- 12th edition, Pearson International edition 2009, Pearson Benjamin Cummings.
4. Microbiology- Concepts and Applications, Pelczar Jr,Chan, Krieg, International ed, McGraw Hill.

Weblinks:

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2. https://repo.knmu.edu.ua/bitstream/123456789/28121/1/Kovalenko%20Sanitary%20microbiology.pdf
3. https://asm.org/Articles/2020/December/Why- Studying- Microorganisms- in- the- Air- Is- Vital

Course Articulation Matrix – 21OEMIB201

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	1	-	-	1	1	-	-	1	-	1
CO 2	2	1	1	2	-	1	1	-	-	1	-	1
CO 3	2	1	1	2	-	1	1	-	-	1	-	1
Weighted Average	2	1	1	2	-	1	1	-	-	1	-	1

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Continuous Formative Evaluation/Internal Assessment

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component- I (C1) and Component- II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20

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Seminar/Presentation/Assignment/Activity/ Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

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- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the ratio is 25 (10 + 15):25).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester- end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme: Part- A (C1): 10 marks
  Part- B (C2): 10 marks + Record: 05 marks = 15 marks
- The student is evaluated for 25 marks in C3 as per the following scheme:

Part A	Major question	08
Part B	Minor question	04
Identify and comment (Any four photographs: Decided by the External Examiner)		08
Viva Voce		05
TOTAL		**25**

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DSC Theory Question Paper Pattern
B.Sc MICROBIOLOGY

Duration: 2½ Hours | Maximum: 60 Marks

Instructions: All questions are compulsory.
Draw neat labeled diagrams wherever necessary.

I Define any FIVE of the following **5X2=10 Marks**

1. (a) (b)
   (c) (d)
   (e) (f)
   (g)

II Write short notes any FIVE of the following **5X6=30 Marks**

(2) (6)
(3) (7)
(4) (8)
(5)

III Answer any TWO of the following **2X10=20 Marks**

(9)
(10)
(11)
(12)

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PATTERN OF PRACTICAL EXAMINATION

Practical examination – B.Sc MICROBIOLOGY- C3

Duration: 3 hours | Max. Marks: 25

Q. 1	Major question	08 Marks
Q. 2	Minor question	04 Marks
Q. 3	Identify and comment	2X4 = 08Marks
Q. 4	Viva- voce	05 Marks

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Open Elective Theory Question Paper Pattern
B.Sc MICROBIOLOGY

Duration: 2½ Hours | Maximum: 60 Marks

Instructions: All questions are compulsory.
Draw neat labeled diagrams wherever necessary.

I Define any FIVE of the following **5X2=10 Marks**

2. (a) (b)
(c) (d)
(e) (f)
(g)

II Write short notes any FIVE of the following **5X6=30 Marks**

(2) (6)
(3) (7)
(4) (8)
(5)

III Answer any TWO of the following **2X10=20 Marks**

(9)
(10)
(11)
(12)

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DEPARTMENT OF MICROBIOLOGY

UG

PG

NEP Syllabi for III and IV Semester B.Sc.

Microbiology

2022- 23

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DEPARTMENT OF MICROBIOLOGY

Motto

Impart benefit to the society

Vision

To provide innovative research expertise

Mission

To expand the knowledge of scientific field research

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Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis – Recognize real- world problems and user' s requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions – Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research – Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5: Use of Modern Techniques/Tools – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO 6: Impact of Science on Society – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO 7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO 8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO 9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life- long Learning – Engage in the art of self- directed learning.

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Board of Studies

Sl. No.	Category	Name and Designation	Address for Communication	e- Mail & Mobile number
1	Chairperson	Smt. Shruthi Prakash H P Assistant Professor & HoD	Department of Microbiology, SBRR Mahajana First Grade College, Mysuru - 12	shruthiprakashhp.fgc@mahajana.edu.in 9731468085
2	Member	Ms. Spandana N Assistant Professor		spandanar.fgc@mahajana.edu.in 9449680239
3		Smt. Sangeetha K P Assistant Professor		sangeethasangeethakp@gmail.com 8431254737
4	Two Experts from Other University	Dr. Jamuna Bai A Assistant Professor	Department of Microbiology, Faculty of life Sciences, JSS – Academy of Higher Education and Research, Mysuru - 570004	jamunabhounsle@gmail.com 9480278098
5		Dr. Sindhu R Assistant Professor		sindhur@jssuni,edu.in 9986297935
6	Nominee by the Vice Chancellor	Dr. Sreenivasa M Y Professor	DOS in Microbiology, UOM, Manasagangotri, Mysuru - 570005	sreenivasamy@gmail.com 9449054480
7	One Person from Industry/ Corporate Sector/Allied Area	Smt. Sushrutha Assistant Manager	Zeus Biotech Limited, Metagalli, Mysuru - 570016	sushruthazeus@gmail.com 8971703690
8	Alumnus	Dr. Chaitra Narayan	Codagu Agritech	codagu.agritech.giu@gmail.co

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		Founder	- Eco, Plot no. 24/3 and 24/4, KIADB, Industrial area, kudlur PB #58, Kushalnagar - 571234	m 9886299801

Year- wise Structure (NEP 2022): Microbiology

Discipline Specific Courses (DSC) and Open Elective (OE)

II Year

Course Type, Code and Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		Marks
Microbiology – III Semester									
222379	**DSC (3) -** Microbial Diversity	4	0	4:0:2 **(6 Credits)**	20	20	60	2½ Hours	**150**
	DSC (3)Lab – Microbial Diversity Lab	0	4		10	15	25	3 Hours	
OE (3)	Microbial Entrepreneurship **22OEMIB301**	3	0	3:0:0 **(3 Credits)**	20	20	60	2½ Hours	**100**
Microbiology – IV Semester									
222479	**DSC (4) -** Microbial Enzymology and Metabolism	4	0	4:0:2 **(6 Credits)**	20	20	60	2½ Hours	**150**
	DSC (4) Lab - Microbial Enzymology and	0	4		10	15	25	3 Hours	

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	Metabolism Lab								
OE (4)	Human Microbiome **22OEMIB401**	3	0	3:0:0 **(3 Credits)**	20	20	60	2½ Hours	**100**

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DSC (3) Syllabus for B.Sc. Microbiology (Basic and Honors)

Semester III

Course Code: 222379	**Course Title**: Microbial Diversity (Theory) Microbial Diversity Lab (Practical)
Course Credits (L:T:P) : 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Appreciate the comprehension of Microbial Diversity.

CO 2: Illustrate the characters, classification and economic importance of Prokaryotic microbes.

CO 3: Emphasize the characters, classification and economic importance of Eukaryotic microbes.

CO 4: Acquire broader facts of viruses and their diversity.

Course Content

Content	Hours
UNIT – 1 Biodiversity and Microbial Diversity	
Concept, definition, and levels of biodiversity; Biosystematics – Major classification systems- Numerical and Chemotaxonomy. Study and measures of microbial diversity; Conservation and Economic values of microbial diversity.	**14**
UNIT – 2: Diversity of Prokaryotic Microorganisms	
Diversity of Prokaryotic Microorganisms : Distribution, factors regulating distribution, general characteristics, classification and economic importance of the following: **Bacteria and Archaea-** An overview of Bergey' s Manual of Systematic Bacteriology. **Bacteria-** *Escherichia coli, Bacillus subtilis* **Cyanobacteria**- *Nostoc, Microcystis, Spirulina* **Archea-** *Thermus aquaticus, Methanogens* **Actinomycetes:** *Streptomyces* **Rickettsiae-** *Rickettsia rickettsii* **Chlamydiae –** *Chlamydia trachomatis* **Spirochaetes-** *Treponema pallidum*	**14**
UNIT - 3: Diversity of Eukaryotic Microorganism	
Diversity of Eukaryotic Microorganism: General characters, Classification and Economic importance. **Fungi:** Ainsworth classification- detailed study up to the level of classes, Salient features and reproduction. Type study: *Rhizopus, Aspergillus, Agaricus, Fusarium .* **Algae:** Occurrence, distribution and symbiotic association - Lichen; Thallus organization and Economic importance of *Chlorella, Cosmarium, Gracilaria.* **Protozoa:** Structure and Reproduction of *Amoeba, Euglena, Paramecium.*	**14**

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UNIT - 4: Diversity of Virus	
Diversity of Virus: General properties and structure, Isolation and Identification of Viruses. Principles of Viral Taxonomy- Baltimore and ICTV and the recent trends. Capsid symmetry- Icosahedral, Helical, Complex **Structure and Replication of the following:** **Human and Animal Viruses:** HIV, Corona, Oncogenic virus **Plants Viruses:** TMV, Bean Mosaic Virus **Microbial Viruses:** T4/Lambda/Cyano/Mycophages. Viroids and Prions.	**14**

References:

1. Prescott, Harley, Klein' s Microbiology, J.M. Willey, L.M. Sherwood, C.J. Woolverton, 7th International, edition 2008, McGraw Hill.
2. A Textbook of Microbiology, R. C. Dubey and D. K. Maheshwari, 1st edition, 1999, S. Chand & Company Ltd.
3. Brock Biology of Microorganisms, M.T.Madigan, J.M.Martinko, P. V. Dunlap, D. P. Clark- 12th edition, Pearson International edition 2009, Pearson Benjamin Cummings.
4. Microbiology – An Introduction, G. J.Tortora, B. R.Funke, C. L. Case, 10th ed. 2008,Pearson Education.
5. Flint, S.J., Enquist, L.W., Drug, R.M., Racaniello, V.R. and Skalka, A.M. 2000. Principles of Virology- Molecular Biology, Pathogenesis and Control. ASM Press, Washington, D.C
6. Vashishta B.R, Sinha A.K and Singh V. P. Botany – Fungi 2005, S. Chand and Company Limited, New Delhi
7. Kotpal R.L Protozoa 5th Edition 2008, Rastogi Publications, Meerut, New Delhi.
8. Alexopoulos, C.J., Mims, C.W., and Blackwell, M. 2002. Introductory Mycology. John Wiley and Sons (Asia) Pvt. Ltd. Singapore. 869 pp.
9. Microbiology- Concepts and Applications, Pelczar Jr. Chan, Krieg, International ed, McGraw Hill

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2. https://pressbooks- dev.oer.hawaii.edu/biology/chapter/prokaryotic- diversity/
3. https://academic.oup.com/femsre/article/42/5/543/5045018
4. http://medbox.iiab.me/kiwix/wikipedia_en_medicine_2019- 12/A/Virus_classification
5. https://www.nature.com/articles/s41564- 020- 0709- x

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DSC (3): Practical
Microbial Diversity

(4Hrs/week) 2 Credits

1. Study of morphology of bacteria.
2. Isolation of bacteria from soil.
3. Isolation of bacteria from air.
4. Isolation of bacteria from water.
5. Isolation of fungi from soil.
6. Isolation of fungi from air.
7. Isolation of fungi from water.
8. Cultivation of Cyanobacteria.
9. Cultivation of Actinomycetes.
10. Study of Cyanobacteria - *Nostoc, Microcyctis, Spirulina.*
11. Study of Algae - *Chlorella,Cosmarium, Gracilaria.*
12. Study of Fungi- *Rhizopus, Fusarium, Agaricus.*
13. Study of Protozoa(Permanent slides) - *Amoeba Paramecium Euglena.*
14. Study of Photographs or Models - HIV, TMV, Corona virus.
15. T4Phage, Lambda, Oncogenic viruses.

Course Articulation Matrix – 222379

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	-	-	-	2	1	1	-	3	2	-	1
CO 2	2	-	-	-	2	1	1	-	3	2	-	1
CO 3	2	-	-	-	2	1	1	-	3	2	-	1
CO 4	2	-	-	-	2	1	-	-	-	2	-	1
Weighted Average	1.75	-	-		2	1	1	-	3	2	-	1

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OE (3) Microbiology Syllabus for All Programs (Except Science)

Semester III

Course Code: 22OEMIB301	**Course Title:** Microbial Entrepreneurship
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):
CO 1: Exhibit entrepreneurial skills.
CO 2: Erudition of industrial entrepreneurship.
CO 3: Proficiency in Healthcare Entrepreneurship.

Course Content

Content	Hours
UNIT – 1 General Entrepreneurship	
Entrepreneurship and microbial entrepreneurship - Introduction and scope, Business development, product marketing, HRD, Biosafety and Bioethics, IPR and patenting, Government organization/ institutions/ schemes, Opportunities and challenges.	14
UNIT – 2 Industrial Entrepreneurship	
Microbiological industries – Types, processes and products, Dairy products, Fermented foods, Alcoholic products and Beverages, Enzymes – Industrial production and applications. Biofertilizers and Biopesticides, SCP (Mushroom and *Spirulina*) etc.	14
UNIT – 3 Healthcare Entrepreneurship	
Production and applications: Sanitizers, Antiseptic solutions, Polyphenols (Flavonoids), Alkaloids, Cosmetics, Biopigments and Bioplastics, vaccines, Diagnostic tools and kits.	14

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1. Srilakshmi B, (2007), Dietetics. New Age International publishers. New Delhi
2. Srilakshmi B, (2002), Nutrition Science. New Age International publishers. New Delhi
3. Swaminathan M. (2002), Advanced text book on food and Nutrition. Volume I. Bappco
4. Gopalan.C.,RamaSastry B.V., and S.C.Balasubramanian (2009), Nutritive value of Indian Foods.NIN.ICMR.Hyderabad.
5. Mudambi S R and Rajagopal M V, (2008), Fundamentals of Foods, Nutrition & diet therapy by New Age International Publishers, New Delhi

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1. https://microbiologysociety.org/publication/past- issues/making- money- from-microbes.html
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3. https://www.researchgate.net/publication/356668525_The_Use_of_Mushrooms_and_Spirulina_Algae_as_Supplements_to_Prevent_Growth_Inhibition_in_a_Pre-Clinical_Model_for_an_Unbalanced_Diet

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Course Articulation Matrix – 22OEMIB301

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	1	1	-	-	1	-	2	-	2	-	1
CO 2	1	1	1	-	1	1	1	-	-	2	-	1
CO 3	1	1	1	1	1	1	1	-	-	2	-	1
Weighted Average	1	1	1	-	1	1	1	2	-	2	-	1

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DSC (4) Syllabus for B.Sc. Microbiology (Basic and Honors)

Semester IV

Course Code: 222479	**Course Title:** Microbial Enzymology and Metabolism (Theory) Microbial Enzymology and Metabolism (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04(Practical)
Total Contact Hours: 56Hours(Theory) 56 Hours(Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1: Delineate the Enzyme activity.
CO 2: Swotting the enzyme kinetics and regulation.
CO 3: Extricate the concepts of Chemoheterotrophic metabolism and Chemolithotrophic metabolism.
CO 4: Differentiating concepts of aerobic and anaerobic respiration and how these are manifested in the form of different metabolic pathways in microorganisms.

Course Content:

Content	Hours
UNIT - 1 Basics of Enzymes	
Definitions of terms – enzyme unit, specific activity and turnover number, exo/ endoenzymes, constitutive/ induced enzymes, isozymes. Monomeric, Oligomeric and Multimeric enzymes. Multienzyme complex: pyruvate dehydrogenase; isozyme: lactate dehydrogenase. Ribozymes, abzymes. **Structure of enzyme**: Apoenzyme and cofactors, prosthetic group- TPP, coenzyme, NAD, metal cofactors. Classification of enzymes, Mechanism of action of enzymes: active site, transition state complex and activation energy. Lock and key hypothesis and Induced Fit hypothesis. Multisubstrate reactions. **Enzyme catalysis:** Catalytic mechanisms with type examples.	14
UNIT - 2 Enzyme Kinetics and Regulation	
Enzyme Kinetics: Kinetics of one substrate reactions. i.e. Equilibrium assumptions ii. Steady state assumptions iii. Michaelis- Menten equations. Kinetics of enzyme inhibition. Competitive, non- competitive and uncompetitive inhibition. Effect of changes in pH and temperature on enzyme catalysed reaction. Kinetics of two substrate reactions. Kinetics of immobilized enzymes. **Enzyme regulation:** Allosteric enzyme - general properties, Hill equation, Koshland-Nemethy- Filmer model. Covalent modification by various mechanisms. Regulation of multi- enzyme complex- Pyruvate dehydrogenase. Feedback inhibition. HIV enzyme inhibitors and drug design. **Microbial Enzymes:** sources- Bacterial, Fungal, and their applications.	14
UNIT – 3 Metabolism of Carbohydrates	

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Chemoheterotrophic Metabolism- Sugar degradation pathways i.e. EMP, ED, Pentose phosphate pathway, Phosphoketolase pathway. TCA cycle. Fermentation - Fermentation balance, concept of linear and branched fermentation pathways. **Fermentation pathways**: Alcohol fermentation and Pasteur effect; Butyric acid and Butanol- Acetone Fermentation, Mixed acid and 2,3- butanediol fermentation, Propionic acid Fermentation (Succinate pathway and Acrylate pathway), acetate fermentation. **Chemolithotrophic Metabolism: Chemolithotrophy** - Hydrogen oxidation, Sulphur oxidation, Iron oxidation, Nitrogen oxidation.	**14**
UNIT – 4 Metabolism of Aminoacids, Nucleotides and Lipids	
Nitrogen Metabolism Introduction to biological nitrogen fixation, Ammonia assimilation, Assimilatory nitrate reduction, dissimilatory nitrate reduction, denitrification. **2. Biosynthesis of ribonucleotides and deoxyribonucleotides** The de novo pathway. Regulation by feedback mechanisms. Recycling via the salvage pathway. **3. Amino acid degradation and biosynthesis.** **4. Lipid degradation and biosynthesis.** **5.Metabolism of one carbon compounds:** Methylotrophs :i. Oxidation of methane, methanol, methylamines; ii. Carbon assimilation in methylotrophic bacteria and yeasts. Methanogens: i. Methanogenesis from methylamines; ii. Energy coupling and biosynthesis in methanogenic bacteria. Acetogens: Autotrophic pathway of acetate synthesis. **6. Metabolism of two- carbon compounds:** **Acetate**: i. Glyoxylate cycle. **Acetic acid bacteria**: Ethanol oxidation, sugar alcohol oxidation. **Glyoxylate and glycolate metabolism**:i. Dicarboxylic acid cycle, ii. Glycerate pathway iii. Beta hydroxyaspartate pathway , **Oxalate** as carbon and energy source.	**14**

References:

1. Philipp. G. Mannual of Methods for General Bacteriology.
2. David T. Plummer. An Introduction to Practical Biochemistry
3. Biochemistry- A Problem Approach, Wood W. B. Wilson J.H., Benbow R.M. and Hood L.E.2nd ed., 1981, The Benjamin/ Cummings Pub.co
4. Biochemical calculations, Segel I.R., 2nd ed., 2004, John Wiley and Sons
5. Biochemical Calculations, Irwin H. Segel, 2nd Edition John Wiley & Sons

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DSC (4): Practical
Microbial Enzymology and Metabolism

(4Hrs/week) 2 Credits

1. Handling of micropipettes and checking their accuracy.
2. Acid and gas production from Carbohydrates – Demonstration of fermentation of lactose.
3. Detection of amino acids by paper chromatography.
4. Screening of fungi for pectin degradation.
5. Starch Hydrolysis.
6. Gelatin Hydrolysis.
7. Catalase activity.
8. Microscopic examination of root nodules.
9. Demonstration of citric acid production.
10. Casein hydrolysis.
11. Demonstration of lipolytic activity.
12. Demonstration of Ammonification/ Dinitrificaton/Nitrification.
13. Demonstration of alcoholic fermentation – Fermentation of glucose using Kuhne' s fermentation vessel.
14. Effect of variables on enzyme activity (amylase): a. Temperature b. pH c. substrate concentration
    d. Enzyme concentration.
15. Study of Photographs – Methanogens, lactose fermentation, Alcohol fermentation, Lock and key hypothesis, Induced Fit hypothesis, ribozymes, abyzymes, Allosteric enzymes, results of Experiments.

Course Articulation Matrix – 222479

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	2	1	-	-	-	-	-	2	-	2
CO 2	3	2	2	1	-	-	-	-	-	2	-	2
CO 3	3	2	2	1	-	-	-	-	-	2	-	2
CO 4	3	2	2	1	-	-	-	-	-	2	-	2
Weighted Average	3	2	2	1	-	-	-	-	-	2	-	2

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OE (4) Microbiology Syllabus for All Programs (Except Science)

Semester IV

Course Code: 22OEMIB401	**Course Title:** HUMAN MICROBIOME
Course Credits (L:T:P): 03 (3:0:0)	**Hours of Teaching/Week:** 3 Hours (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours (Theory)	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO 1: Articulate a deeper understanding on biological complexities of human microbiome.
CO 2: Acquire broader goals of biological anthropology.
CO 3: Compare and contrast the microbiome of different human body sites and impact human health
promotion.

Course Content

Content	Hours
UNIT – 1 Introduction to Microbiome	
Evolution of microbial life on Earth, Symbiosis host- bacteria. Microbial association with plants and animals, Symbiotic and parasitic, Normal human microbiota and their role in health. Microbiomes other than digestive system.	**14**
UNIT – 2 Microbiomes and Human health	
Microbiome in early life, Nutritional modulation of the gut microbiome for metabolic health- role of gut microbiomes in human obesity, human type 2 diabetes and longevity. Probiotics- Criteria for probiotics, Development of Probiotics for animal and human use; Pre and synbiotics. Functional foods- health claims and benefits, Development of functional foods.	**14**
UNIT – 3 Culturing of Microbes from Microbiomes	
Culturing organisms of interest from the microbiome: bacterial, archaeal, fungal, yeast and viral. Extracting whole genomes from the microbiome to study microbiome diversity **Microbiomes and diseases:** Microbiome and disease risks: The gut microbiome and host immunity, bacteriocins and other antibacterial. Human microbiome research in nutrition	**14**

References:

1. Prescott, Harley, Klein' s Microbiology, J.M. Willey, L.M. Sherwood, C.J. Woolverton, 7th International,edition 2008, McGraw Hill.
2. A Textbook of Microbiology, R. C. Dubey and D. K. Maheshwari, 1st edition, 1999, S. Chand & Company Ltd.
3. Brock Biology of Microorganisms, M.T.Madigan, J.M.Martinko, P. V. Dunlap, D. P. Clark - 12th edition, Pearson International edition 2009, Pearson Benjamin Cummings.

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4. Microbiology- Concepts and Applications, Pelczar Jr,Chan, Krieg, International ed, McGraw Hill.

Weblinks:

1. https://uta.pressbooks.pub/microbiomeshealthandtheenvironment/chapter/an-introduction- to- microbiomes/
2. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5962619/
3. https://microbiologysociety.org/our- work/75th- showcasing- why- microbiology-matters/unlocking- the- microbiome/the- microbiome- and- human- health.html
4. https://www.technologynetworks.com/immunology/articles/an- introduction- to-culturing- bacteria- 355566

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Course Articulation Matrix – 22OEMIB401

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	-	-	2	-	1	1	-	-	2	-	1
CO 2	2	2	2	2	-	1	1	-	-	2	-	1
CO 3	2	1	1	2	-	1	1	-	-	2	-	1
Weighted Average	2	1.5	1.5	2	-	1	1	-	-	2	-	1

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Continuous Formative Evaluation/Internal Assessment

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60% .

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component- I (C1) and Component- II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20

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Seminar/Presentation/Assignment/Activity/ Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

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- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the ratio is 25 (10 + 15):25).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., the students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester- end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme: Part- A (C1): 10 marks
  Part- B (C2): 10 marks + Record: 05 marks = 15 marks
- The student is evaluated for 25 marks in C3 as per the following scheme:

Part A	Major question	08
Part B	Minor question	04
Identify and comment (Any four photographs: Decided by the External Examiner)		08
Viva Voce		05
TOTAL		**25**

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DSC Theory Question Paper Pattern
B.Sc MICROBIOLOGY

Duration: 2½ Hours Maximum: 60 Marks

Instructions: All questions are compulsory.
Draw neat labeled diagrams wherever necessary.

I Define any FIVE of the following **5X2=10 Marks**

1. (a) (b)
(c) (d)
(e) (f)
(g)

II Write short notes any FIVE of the following **5X6=30 Marks**

(2) (6)
(3) (7)
(4) (8)
(5)

III Answer any TWO of the following **2X10=20 Marks**

(9)
(10)
(11)
(12)

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PATTERN OF PRACTICAL EXAMINATION

Practical examination – B.Sc MICROBIOLOGY- C3

Duration: 3 hours | Max. Marks: 25

Q. 1	Major question	08 Marks
Q. 2	Minor question	04 Marks
Q. 3	Identify and comment	2X4 = 08Marks
Q. 4	Viva- voce	05 Marks

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Open Elective Theory Question Paper Pattern
B.Sc MICROBIOLOGY

Duration: 2½ Hours Maximum: 60 Marks

Instructions: All questions are compulsory.
Draw neat labeled diagrams wherever necessary.

I Define any FIVE of the following **5X2=10 Marks**

1. (a) (b)
(c) (d)
(e) (f)
(g)

II Write short notes any FIVE of the following **5X6=30 Marks**

(2) (6)
(3) (7)
(4) (8)
(5)

III Answer any TWO of the following **2X10=20 Marks**

(9)
(10)
(11)
(12)

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Mahajana Education Society (R.)
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(Autonomous)

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BOARD OF STUDIES (BoS)

DEPARTMENT OF MICROBIOLOGY

UG ☑

PG ☐

NEP Syllabi for V and VI Semester

B.Sc. Microbiology

2023-24

DEPARTMENT OF MICROBIOLOGY

Motto

Impart benefit to the society

Vision

To provide innovative research expertise

Mission

To expand the knowledge of scientific field research

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions -Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO5: Use of Modern Techniques/Tools – Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO6: Impact of Science on Society – To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning – Engage in the art of self-directed learning.

List of BoS Members

Sl No	Category	Name and Designation	Address for Communication	e-Mail & Mobile No.
1.	Chairperson	Ms. Spandana N Assistant Professor & HoD	Department of Microbiology, SBRR Mahajana First Grade College, Autonomous Jaylakshmipuram, Mysuru-12	spandanan.fgc@mahajana.edu.in 9449680239
2.	Nominee by the Vice Chancellor	Dr. Sreenivasa M Y Professor	DoS in Microbiology, Manasagangothri University of Mysore, Mysuru.	sreenivasamy@gmail.com 9449054480
3.	Two Experts from Other University	Dr. Jamuna Bai Assistant Professor	Department of Microbiology, School of Life Sciences, JSS Academy of Higher Education & Research, Mysuru - 570004	jamunabhounsle@gmail.com 9480278098
4.		Dr. Sindhu R Assistant Professor		sindhur@jssuni.edu.in 9986297935
5.	One Person from Industry	Dr. Sushrutha Assistant Manager	Zeus Biotech Limited, Metagalli, Mysuru -570016	sushruthazeus@gmail.com 8971703690
6.	Alumnus	Dr. Chaithra Narayan Founder	Codagu Agritech-Eco Plot no.24/3 and 24/4, KIADB, Industrial area, kudlur PB#58, Kushalnagar-571234	codagu.agritech.giu@gmail.com 9886299801

Course Structure (NEP 2020)

III Year B.Sc. Microbiology

Discipline Specific Courses (DSC), Employability Skills (EMP), Internship (INT).

L: Lecture; **T:** Tutorial; **P:** Practical

Course Code, Type and Title		Hours /week		Number of Credits	Max Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	(L:T:P)	C1	C2	C3		
V SEMESTER									
232579	DSC (5) Microbial Genetics	4	0	4 : 0 : 2 (6credits)	20	20	60	2½ Hours	100
	DSC (5) LAB Microbial Genetics	0	4		10	15	25	3 Hours	50
232580	DSC (6) Food Microbiology	4	0	4 : 0 : 2 (6 credits)	20	20	60	2½ Hours	100
	DSC (6) LAB Food Microbiology	0	4		10	15	25	3 Hours	50
23EMP MIB01	SEC (1) Microbial and Biochemical Techniques	2	0	2 : 0 : 1 (3credits)	10	10	30	1½ Hours	50
	SEC (1) LAB Microbial and Biochemical Techniques	0	2		10	15	25	3 Hours	50
VI SEMESTER									
232679	DSC (7) Immunology and Medical Microbiology	4	0	4 : 0 : 2 (6credits)	20	20	60	2½ Hours	100
	DSC (7) LAB Immunology and Medical Microbiology	0	4		10	15	25	3 Hours	50

Microbiology – VI Semester									
232680	DSC (8) Industrial Microbiology	4	0	4 : 0 : 2 (6credits)	20	20	60	2½ Hours	100
	DSC (8) LAB Industrial Microbiology	0	4		10	15	25	3 Hours	50
23INTMIB01	SEC (2) INT Internship	2	0	2 : 0 : 0 (2credits)	50	50	--	--	100

DSC (5) Syllabus for B.Sc. Microbiology

Semester-V

Course Code: 232579	**Course Title**: Microbial Genetics(Theory) Microbial Genetics (Practical)
Course Credits (L:T:P) : 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours(Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2½ Hours(Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

COURSE OUTCOMES (COs):

CO 1: Appreciate the experimental evidences to prove DNA as genetic material and differentiate various method of recombination in bacteria.

CO 2: Comprehend the concepts involved in replication, transcription, and translation in bacteria.

CO 3: Acquire information on regulatory mechanisms and gene expression in bacteria.

CO 4: Differentiating gene interaction in viruses and fungi.

Course Content	**60Hrs**
UNIT -1 : DNA as genetic material and Bacterial Genetics	
DNA as a genetic material: Griffith experiment of Transformation, Avery, MacLeod and McCarty experiment, Hershey and Chase experiment to prove DNA carries the genetic information. Structure and organization of chromosomes in prokaryotes. Plasmid- types, Transposons in Prokaryotes. **Bacterial Genetics**: Mechanism of genetic exchange in bacteria: Bacterial transformation- Principle and Types of transformation mechanisms found in prokaryotes. Bacterial Conjugation: U-tube experiment, properties of the F plasmid, F^+ x F^- conjugation, F′ x F^- conjugation, Hfr x F^-conjugation, Transduction: Generalized and specialized transduction.	**15**

UNIT – 2: Genetic Material and Replication and Transcription of DNA	
Genetic Material: Chemical basis of heredity, Watson and Crick model of DNA, DNA types, RNA-types, structure, importance. Modern conceptof gene- cistron, muton, recon. **DNA Replication:** Replicon, Enzymes and proteins involved in DNA replication; DNA polymerases, DNA ligase, primase, telomerase. General mechanism of replication. Models of DNA replication including rolling circle, Θ (theta) mode of replication. **Transcription**: Structure of bacterial RNA polymerase, Promoter concept, Recognition of promoters and DNA melting, Transcription bubble, Stages of transcription- initiation elongation and termination.	**15**
UNIT - 3: Gene expression and Regulation	
Gene expression: Genetic code- features, Wobble hypothesis. Translational machinery, Charging of t RNA, aminoacyl t RNA synthetases, Mechanisms of initiation, elongation and termination of polypeptides in prokaryotes. Post translational modifications of proteins.Protein maturation and secretion- protein splicing, molecular chaperones. **Gene regulation**: Regulatory mechanisms in bacteria. Operon concept, polycistronic mRNA. *lac* operon - negative inducible, structure of *lac* repressor, mechanism of binding of repressor to operator. Catabolite repression of *lac* operon. Regulation by lac repressor and CAP.	**15**
UNIT - 4: Genetics of Viruses and Fungi and Mutation	
Genetics of Viruses: Genetic recombination in phages, Heterozygosity inphages. Temperate phage and prophage, (Non-genetic interaction of viral gene products- Complementation, Phenotypic mixing). **Genetics of Fungi**: Life cycle of *Neurospora*, Tetrad analysis, unordered tetrad analysis in yeast, ordered tetrad analysis in *Neurospora*. **Mutation:** Nature and types, Mutagenic agents: physical and chemical mutagens, damage and repair of DNA: Photoreactivation and SOS repair, Ames test.	**15**

References:

1. Microbial Genetics by Maloy et al., 1994. Jones and Bartlett Publishers.
2. Molecular Genetics of Bacteria by J. W. Dale. 1994. John Wiley and Sons.
3. Modern Microbial Genetics. 1991 by Streips and Yasbin. Niley Ltd.
4. Molecular Biology of the Gene 4th Edition by J.D. Watson, N.H. Hoppkins, J.W. Roberts, J.A. Steitz and A.M. Weiner. 1987, Benjamin / Cummings Publications Co. Inc. California.
5. Gene VII by Lewin Oxford University Press. 2000.
6. Bacterial and Bacteriophage Genetics. 4th Editions by Birge.
7. Microbial Genetics by Frefielder. 4th Edition.
8. Organization of Prokaryotic Genome. 1999 by Robert L.Charlebois, ASM Publications.
9. Molecular Genetics of Bacteria, 1997 by Larry, Snyder and Wendy, Champness, ASM
10. James D. Watson, Tania A. Baker, Stephen P. Bell, Alexander Gann, Michael Levine, Richard Losick. Molecular Biology of the Gene, 7th edition. 2017.
11. Freifelder's Essentials of Molecular Biology. George M Malacinski, 4th ed. 2015
12. Alberts Bruce , Johnson A , Lewis J , Raff M , Roberts K, Walter P (2014) Molecular Biology of the Cell. 5th Edition, Taylor and Francis. New York, USA.
13. Tropp BE (2012) Molecular Biology: Genes to Proteins. 4rdEdition, Jones & Bartlett,Learning,Burlington, MA
14. Allison A. Elizabeth (2012) Fundamental Molecular Biology,2nd Edition. J Willey andSons,Hoboken, New Jersey
15. Frederick M. Ausubel, Roger Brent, Robert E. Kingston, David D. Moore, J.G. Sandman, John A. Smith, Kevin Struhl (2003). Current Protocols in Molecular Biology. John Wiley & Sons, New York,United States.
16. Sambrook JF, Russell DW (2001). Molecular Cloning: a Laboratory Manual. 3rd edition. Cold Spring Harbor, N.Y. Cold Spring Harbor Laboratory Press

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2. https://www.sanger.ac.uk/
3. https://www.nature.com/scitable/definition/mutation-8/
4. https://microbenotes.com/the-wobble-hypothesis/
5. https://www.britannica.com/science/transcription-genetics
6. http://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/botany/07._genetics/05._tetrad_analysis/et/5903_et_tetrad_analysis_et.pdf

DSC (5): Practical: Microbial Genetics

(4Hrs/week) 2 Credits

1. Micropipeting: Moving very small volumes very accurately.
2. Isolation of DNA from microbial source.
3. Determination of purity and quantity of DNA.
4. Visualization of genomic DNA by agarose gel electrophoresis.
5. Estimation of DNA by Diphenylamine method.
6. Estimation of RNA by orcinol method.
7. Isolation of Coliphages from sewage.
8. Preparation of Master and Replica plates.
9. Isolation of antibiotic resistant mutant by gradient plate method.
10. Study of effect of Physical mutagen (UV) on bacterial cells.
11. Study survival curve of bacteria after exposure to ultraviolet (UV) light.
12. Effect of Chemical mutagen on the growth of microorganism (Ames test)
13. Preparation of competent cells for bacterial transformation.
14. Demonstration of bacterial conjugation by plate mating method.
15. Study of Photographs - Griffith's experiment, conjugation, transduction, plasmid DNA, T4 phage, ordered tetrad analysis in *Neurospora*, Watson and Crick model of DNA, t RNA, semi-conservative replication of DNA, bacterial RNA polymerase, transcription, translation and lac operon through schematic representations.

COURSE ARTICULATION MATRIX – **232579**

CO / PO	PO 1	PO 2	PO 3	PO4	PO 5	PO 6	PO7	PO 8	PO 9	PO10	PO11	PO12
CO 1	2	1	1	2	2	2	2	2	-	3	2	2
CO 2	2	1	2	2	2	3	1	2	-	3	2	2
CO 3	2	-	2	2	3	2	1	1	1	3	1	2
CO 4	2	1	2	2	2	2	2	1	1	3	1	1
Weighted Average	2	1	1.75	2	2.25	2.25	1.5	1.5	1	3	1.5	1.75

DSC (6) Syllabus for B.Sc. Microbiology

Course Code: 232580	**Course Title:** Food Microbiology (Theory) Food Microbiology (Practical)
Course Credits (L:T:P): 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04(Practical)
Total Contact Hours: 60 Hours(Theory) 60 Hours(Practical)	**Formative Assessment Marks:** 40 (Theory) 25(Practical)
Exam Duration: 2½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

COURSE OUTCOMES (COS):

CO 1: Appreciate the roles of microbes in food crops production and acquire information on disease of food crops.

CO 2: Considerate the association of microbes in food and the quality testing of food and water.

CO 3: Comprehend the methods of spoilage of food, the diseases associated with it and acquire broader facts on preservation and food safety protocols.

CO 4: Acquire information about properties of milk, methods of preservation of milk and capture facts on types of fermented food and dairy products and its significance.

Course Content	**60Hrs**
UNIT 1: Production of food crops and their diseases	
Role of microbes in food crops production: Biofertilizers: Definition, Mass production, mode of applications, advantages and limitations of *Rhizobium, Azotobacter, Azospirillum,* Cyanobacterial fertilizers. Role of *Frankia* and VAM in soil fertility. Biopesticides: Definition, types- bacterial (*Bacillus thuringiensis*) viral(*Baculovirus*) and fungal (*Beauveria bassiana*)-mode of action, factors influencing, target pests. Microbial herbicides. **Diseases of food crops**: Study of symptoms, etiology, epidemiology and management of diseases caused by fungi (Tikka disease of groundnut, blast disease of paddy), bacteria (Citrus canker, Bacterial blight of rice), viruses (Papaya Ring Spot, Bunchy top of banana) and viroid (Potato spindle tuber disease).	**15**

UNIT – 2: Microbial quality of air and water for food processing and disposal of wastewater	
Bioaerosols in food: Air borne microbes and their impact on food. Bioaerosol sampling: Vertical cylinder spore trap, Hirst spore trap, Rotorod sampler, Andersensampler, Impingers and filtration. Control of bioaerosols- UV light, HEPA filters, desiccation, Incineration. **Water quality in food safety**: Water sample collection, methods to detect potability of water samples: presumptive/MPN tests, confirmed and completed tests for faecal coliforms, SPC, IMViC reactions, membrane filter technique. Water borne pathogens, Control of water borne pathogens- Precipitation, filtration, chemical disinfection, UV light. **Disposal of wastewater in food industries**: Sources of waste water, Physical, Chemical and Microbiological characteristics of wastewater. Wastewater treatment- primary (screening, coagulation and sedimentation), secondary (trickling filter, activated sludge process, oxidation pond) tertiary (reverse osmosis, ion exchange). Methods of solid waste disposal (composting). BOD and COD.	**15**
UNIT - 3: Food spoilage, Infection and Preservation	
Microbes and Food: Introduction, Scope of Food Microbiology, Food as a substrate for microorganisms- Intrinsic and extrinsic parameters affecting the growth of microbes. Spoilage**:** Sources of food contamination, Principles of food spoilage, Spoilage of meat, Spoilage of fruits and vegetables. Spoilage of canned food. Food borne infection and intoxication**-** Salmonellosis, Botulism and Aflatoxicosis. **Food Preservation:** Principles of food Preservation. Methods of - Physical (temperature, drying, irradiation), chemical (Class I – Salt, Sugar) and (Class II- Propionates, Benzoates, Sorbates, Sulfites, Nitrite and Nitrates). Bio preservation (Antimicrobials). Canning. Food Packaging-Types of packaging materials, properties and benefits. Food sanitation and Control, HACCP, and FSSAI in brief.	**15**
UNIT - 4: Microbiology of milk and fermented food products	
Dairy Microbiology: Composition of milk. Sources of contamination of milk. Biochemical changes of milk- souring, gassy fermentation, proteolysis, lipolysis, and ropiness. Microbiological analysis of milk- Rapid platform tests (COB, Phosphatase test, DMC), SPC and Reduction tests. Preservation of milk and milk products- Pasteurization, dehydration, sterilization. Starter culture- types and role. **Fermented foods:** Fermented milk (Cheese- types and production of Cheddar, Tofu, Yoghurt, and Acidophilus milk), Vegetable (pickles) Meat (sausage) and fish (fish sauce). Beverages-beer, Microbes as food- SCP- *Spirulina*. Prebiotics, Probiotics and its characteristics.	**15**

References:

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Web links:

1. https://bio.libretexts.org/Bookshelves/Microbiology/Book%3A_Microbiology_(Boundless)/17%3A_Industrial_Microbiology
2. https://www.britannica.com/science/microbiology/Food-microbiology
3. https://biologyreader.com/food-preservation-techniques.html
4. https://www.healthline.com/nutrition/8-fermented-foods
5. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8724949/

DSC (6): Practical Food Microbiology

(4Hrs/week) 2 Credits

1. Standard analysis of water samples and Determination of MPN.
2. Biochemical differentiation of Enterobacteriaceae isolates by IMViC reactions.
3. Determination of bacteriological quality of water by H_2S paper strip test.
4. Measurement of Biochemical Oxygen Demand (BOD) of food processing wastewater.
5. Estimation of total solids of wastewater from food processing unit.
6. Microscopic examination of water samples for biological indicator microorganisms.
7. Isolation of bacteria and fungi from Food Utensil.
8. Isolation of bacteria and fungi from Spoiled Vegetables.
9. Isolation and Identification of *Aspergillus* on groundnut by blotters method.
10. Turbidity index for the detection of efficiency of sterilization of milk.
11. Methylene blue Reductase Test (MBRT) to determine the quality of Milk.
12. Quantitative examination of bacteria in raw and pasteurized milk by SPC method.
13. Culturing of *Spirulina* sp. as single cell protein.
14. Display of Photographs of disease food crops: Citrus canker, Bacterial blight of Rice, Tikka disease of groundnut, Blast disease of Paddy, Papaya Ring Spot disease and Potato spindle tuber disease, Biofertilizers
15. Display of photographs of Air samplers, water purification process and waste water treatment.

Note: Visit to agriculture research station, water/sewage treatment plant & food industry

COURSE ARTICULATION MATRIX – **232580**

CO / PO	PO 1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	2	3	3	3	2	3	3	2
CO 2	3	2	2	2	2	3	2	1	2	3	3	2
CO 3	2	3	3	2	2	3	2	1	-	2	1	1
CO 4	3	3	3	2	3	3	3	1	1	3	3	2
Weighted Average	**2.75**	**2.75**	**2.75**	**2.25**	**2.25**	**3**	**2.5**	**1.5**	**1.67**	**2.75**	**2.5**	**1.75**

Semester V

SEC: Microbial and Biochemical Techniques

Course Code: 23EMPMIB01	**Course Title:** Microbial and Biochemical Techniques (Theory) Microbial and Biochemical Techniques (Practical)
Course Credits (L:T:P): 03 (2:0:1)	**Hours of Teaching/Week:** 02 (Theory) 02(Practical)
Total Contact Hours: 30Hours(Theory) 30Hours(Practical)	**Formative Assessment Marks:** 20 (Theory) 25(Practical)
Exam Duration: 1½ Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 30 (Theory) 25(Practical)

COURSE OUTCOMES (COS):

CO 1: Demonstrate skills in microbiological and analytical techniques and comprehend the principles which underlie sterilization of culture media, glassware and plastic ware to be used for microbiological work.

CO 2: Considerate the principles of a number of analytical instruments which the students have to use during the study and also later as microbiologists for performing various laboratory manipulations and handle several separation techniques which may be required to be handled later as microbiologists.

Course Content	**30Hours**
UNIT – 1 Microbial Techniques	
Methods and practices of cleaning and management of lab: Learning and Practice of Integrated Clean-In-Place (CIP) and Sterilize-In-Place (SIP) as per Industry standards, Standard Operating Procedure (SOP)for various equipment in the QC Lab. Sterility check, Bio-burden and Logbook maintenance. **Handling and calibration of lab equipment**- Weighing balance, Micropipette Autoclave, Hot air Oven, Incubator, Centrifuge, Water bath, Colony Counter, and Stability chamber, Preparation of Normality, Molarity, and buffer solutions. **Types of culture media and their maintenance:** Preparation of various culture media.Cultivation of Bacteria, Fungi, Actinomycetes and Algae. Isolation and preservation of pure culture. Morphological and biochemical characterization of bacteria.	**15**

UNIT – 2 Biochemical Techniques	
Centrifugation: Principles of Centrifugation and Ultracentrifugation techniques and its applications. **Chromatography:** Principle and techniques with applications (Partition, adsorption, ion exchange, exclusion and affinity chromatography).Electrophoretic technique (agarose and polyacrylamide gel) its components, working and applications. **Spectrophotoscopy and Radiobiology:** Principle, mechanism and application of instruments used in Spectrophotometric techniques (UV and visible). Radiobiological techniques – characters of radioisotopes, autoradiography, Radioisotope dilution technique and pulse chase experiments. Basic principles & Law of absorption and radiation and its application.	**15**

References

1. Michael Lufaso (2016). "Laboratory Skills for Science and Medicine:An Introduction".CRC Press.
2. Colin A. Ramsden (2014). "Analytical Molecular Biology". Oxford University Press.
3. John M. Walker and Ralph Rapley (2014). "Molecular Biomethods Handbook".HumanaPress.
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8. Aurora Blair. Laboratory Techniques & Experiments in Biology.Intelliz Press
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Web links:

1. **https://www.intechopen.com/chapters/37593https://techsafety.com/**
2. **https://pharmastate.academy/sop-responsibilities-of-quality-control-dept/**
3. **https://microbenotes.com/centrifugation-principle-types-and-applications/**
4. **https://www.astro.org/Affiliate/ARRO/Resident-Resources/Educational-Resources/Webinars/Radiation-Biology-and-Physics**

SEC: Practical: Microbial and Biochemical Techniques

(2Hrs/week) 1 Credit

1. Usage and maintenance of basic equipment of microbiology lab: Principles, calibrations, and SOPs of balances, pH meter, Autoclaves, Laminar flows, Biosafety cabinets, Microscopes, Homogenizers and Magnetic stirrers.
2. Cultivation of microorganisms: (i) Bacterial cultivation: (a) Streak-plate method (*E.coli, Staphylococcus aureus*) Streaking with inoculation loop. Streaking with toothpick. (b) Pour-plate method (*E.coli*).
3. Maintenance of microorganisms (slant culture, stab culture, glycerol stocks)
   (ii) Fungal cultivation (a) Yeast (*Saccharomyces cervisiae*) Molds (*Penicillium notatum, Aspergillus niger*)
4. Estimation of CFU count by serial dilution- spread plate method/pour plate method.
5. Study of colony characteristics on nutrient agar
6. Biochemical characterization of bacteria:
   a) Sugar utilization test (minimal medium + sugar)
   b) Sugar fermentation test (peptone water method, Ammonium salt sugar method
   c) IMViC reactions
   d) Enzyme detection – Amylase, Gelatinase, lipase, caseinase, Catalase, and Oxidase
   e) Oxidative-fermentative test, arginine hydrolysis, ornithine, lysine decarboxylase, nitrate, nitrite reduction
7. Separation of mixtures by paper / thin layer chromatography.
8. Demonstration of column packing in any form of column chromatography.
9. Separation of protein mixtures by any form of chromatography.
10. Separation of protein mixtures by Polyacrylamide Gel Electrophoresis (PAGE).
11. Determination of absorption max for an unknown sample and calculation of extinction coefficient.

COURSE ARTICULATION MATRIX – **23EMPMIB01**

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	-	2	1	1	1	-	1	2	2	3	3
CO 2	3	1	2	2	3	2	1	1	2	2	3	3
Weighted Average	**3**	**1**	**2**	**1.5**	**2**	**1.5**	**1**	**1**	**2**	**2**	**3**	**3**

DSC (7) Syllabus for B.Sc. Microbiology

VI SEMSTER

Course Code: 232679	**Course Title:** Immunology and Medical Microbiology (Theory) Immunology and Medical Microbiology (Practical)
Course Credits (L:T:P) : 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks**: 40 (Theory) 25 (Practical)
Exam Duration: 2½ Hours(Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

COURSE OUTCOMES (COS):

CO 1: Gain preliminary information about various immune mechanisms and articulate the concepts of antigen, antibodies and its classes.

CO 2: Familiarize with immunological techniques and sero-diagnosis of infectious diseases**.**

CO 3: Emphasize the pathogenic bacterial infections, pathogenesis, symptoms, and diagnosis and treatment process.

CO 4: Emphasize the pathogenic viral, fungal infections, its pathogenesis, symptoms, diagnosis and treatment process also comprehend the concepts of antimicrobial agents and antibiotic resistance.

Course Content	**60 Hours**
UNIT – 1 : Introduction to Immune system	
Immune system: Historical perspective of immunology. Immunity- Definition and types. Cells and organs of immune system: B and T Lymphocytes, Natural killer (NK) cells, Granulocytes (Neutrophils, Eosinophils and Basophils), Monocytes and macrophages, Dendritic cells and Mast cells. Primary lymphoid organs-Bone marrow and Thymus. Secondary lymphoid organs- Spleen and Lymph nodes. Lymphoid tissues- MALT and GALT. **Antigen and Antibody:** Antigen- Definition, properties and types. Immunogenicity and antigenicity, epitopes, haptens. Degree of foreignness, molecular weight, degradability. Adjuvants and their importance. Antibody: Definition, Basic structure of antibody, Structure and functions of different types of antibodies (IgG, IgA, IgM, IgD and IgE). Antigenic Determinants on immunoglobulin: Isotype, allotype and idiotype.	15

UNIT – 2: Antigen-Antibody interactions and Hypersensitive reactions	
Antigen-antibody reactions: Definition, salient features, antibody affinity and avidity, cross reaction. Agglutination reactions: Hemagglutination-blood grouping. Immunoprecipitation: Radial (Mancini) and double (Ouchterlony) immunodiffusion, and Immunoelectrophoresis. Complement mediated opsonization, complement fixation test. Immunotechniques: Enzyme linked immune-sorbent assay (ELISA): Direct, indirect, sandwich and competitive ELISA, Radioimmunoassay (RIA) and Immunofluorescence. **Hypersensitive reactions:** Classification, antibody mediated hypersensitivity; Type I (IgE), Type II (IgG and IgM-ADCC), Type III (Antigen-antibody complex), and Cell mediatedhypersensitivity Type IV (DTH). (Autoimmune diseases – Myasthenia gravis, Diabetes mellitus.Immunoprophylaxis-Vaccines-Types-Killed, Live attenuated and Toxoid with an example each.National Immunization Schedule.	**15**

UNIT - 3: Host-Pathogen interaction and Medical Bacteriology	
Host Pathogen interaction: Normal microflora of Human skin, respiratory tract, gastrointestinal tract, urogenital tract and their importance. Host pathogen interaction: Definitions - Infection, Invasion, Pathogen, Pathogenicity, Virulence, Attenuation, Exaltation, Toxigenicity,Carriers and their types. Infection-types of infection, modes of transmission of infection, portal of entry of pathogen. Sample collection, transport and storage. **Medical Bacteriology:** Cultural characteristics, biochemical characteristics, pathogenesis Symptoms, mode of transmission, prophylaxis and control of the following- respiratory diseases caused by *Streptococcus pyogenes*, *Mycobacterium tuberculosis.* Gastrointestinal Diseases caused by: *Salmonella typhi*, *Vibrio cholerae*, UTI-*E coli*, Others: *Treponema pallidum.*	**15**
UNIT - 4: Medical Virology, Parasitology and Mycology and Chemotherapy	
Medical Virology Parasitology and Mycology: Pathogenesis, Clinical Symptoms, Laboratory diagnosis, mode of transmission, prophylaxis and control of Dengue, AIDS, and Corona. Malaria, Amoebic dysentery. Fungal infections: Cutaneous mycoses- Tinea pedis (Athlete's foot), Systemic mycoses- Histoplasmosis and Opportunistic mycoses- Candidiasis. **Antimicrobial agents**: General characteristics and mode of action Antibacterial agents: Inhibitor of nucleic acid synthesis (Sulfonamides);Inhibitor of cell wall synthesis (Penicillin); Inhibitor of cell membrane function (Daptomycin); Inhibitor of Protein synthesis (Chloramphenicol);Inhibitor of metabolism (Isoniazid), Mechanism of action of antifungal agents: Amphotericin B, Griseofulvin; Antiviral agents: Acyclovir, Azidothymidine, Antibiotic resistance, MDR, MRSA.	**15**

References:

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3. Goering R., Dockrell H., Zuckerman M. and Wakelin D. (2007)Mims' Medical Microbiology. 4thedition. Elsevier
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5. Madigan MT, Martinko JM, Dunlap PV and Clark DP. (2014). Brock Biology of Microorganisms.14thedition. PearsonInternational Edition
6. Delves P, Martin S, Burton D, and Roitt IM. (2006). Roitt's Essential Immunology.11th edition Wiley- Blackwell Scientific Publication, Oxford.
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Web links:

1. https://www.ncbi.nlm.nih.gov/books/NBK279395/
2. https://www.medicalnewstoday.com/articles/320101#immunity
3. http://www.antimicrobe.org/b242.asp
4. https://main.mohfw.gov.in/sites/default/files/24545352106148966387 3.pdf
5. http://www.textbookofbacteriology.net/normalflora_3.html
6. https://www.ncbi.nlm.nih.gov/books/NBK459452/
7. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7120529/
8. https://www.ncbi.nlm.nih.gov/books/NBK11774/

DSC (7): Practical: Immunology and Medical Microbiology

(4Hrs/week) 2 Credits

1. Identification of Human blood groups and Rh factor.
2. Perform Total Leukocyte Count of the given blood sample.
3. Demonstration: separate serum from the blood sample.
4. Perform immunodiffusion by Ouchterlony method.
5. Demonstration of Single Radial Immunodiffusion.
6. Widal test / HCG test.
7. VDRL test
8. Study of bacterial flora of skin by swab method.
9. Study of bacterial flora of oral cavity by swab method.
10. Perform antibiotic sensitivity by Kirby-Bauer method.
11. Identify bacteria (*E. coli, Bacillus*) using laboratory strains on the basis of cultural, morphological and biochemical characteristics: IMViC,TSI, nitrate reduction, urease production and catalase tests
12. Study of various stages of malarial parasites.
13. Study of composition and use of important differential media for identification of pathogenic bacteria: EMB Agar, MacConkey agar, Mannitol salt agar, Deoxycholate citrate agar, TCBS agar.
14. Display of photographs of human pathogens: Mycobacterium tuberculosis, *Treponema pallidum, Vibrio cholerae, Salmonella typhi,* AIDS, Dengue, Corona, Histoplasmosis, Candidiasis and Athlete's foot.

Note: Visit to Pharmaceutical and Pathology Laboratory

COURSE ARTICULATION MATRIX – **232679**

CO/PO	PO 1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	1	1	-	-	2	1	2
CO 2	3	2	3	3	3	3	2	2	2	3	3	1
CO 3	3	2	3	3	3	3	2	2	2	3	3	2
CO 4	3	3	3	3	3	3	2	2	2	3	3	2
Weighted Average	**2.75**	**2.25**	**2.5**	**2.5**	**2.5**	**2.5**	**1.75**	**2**	**2**	**2.75**	**2.5**	**1.75**

DSC (8) Syllabus for B.Sc. Microbiology

Course Code: 232680	**Course Title:** Industrial Microbiology (Theory) Industrial Microbiology (Practical)
Course Credits (L:T:P) :06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks**:40 (Theory) 25 (Practical)
Exam Duration: 2½ Hours(Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

COURSE OUTCOMES (COS):

CO1: Considerate the overview of scope and importance ofindustrially important microbes and compare different types of fermentation processes and equipment's.

CO2: Acquire broader facts of purification of value-added products.

CO3: Comprehend facts on the concepts and terminology in genetic engineering.

CO4: Competent about principles involved in manipulating genesand DNA and emphasize with various techniques used in geneticengineering.

Course Content	**60Hours**
UNIT - 1 Introduction to Industrial Microbiology	
Introduction to Industrial Microbiology: Scope and concepts. Microorganisms of industrial importance: Selection criteria, Strain improvement and Preservation. Fermentor: Design and components of a bioreactor, Control of air, temperature and pH monitoring probes, Specialized bioreactors: Airlift bioreactors, fluidized bed reactor, and packed bed reactors. Sterilization of fermentor. Aseptic inoculation and sampling methods. **Fermentation media and process**: Natural and synthetic media. Production medium and Inoculummedium. Raw materials (Molasses and its types, corn steep liquor, sulphite waste liquor and whey).Buffers, Precursors, Inhibitors and Antifoam agents. Sterilization of media, Types of fermentation process: Submerged fermentation, Solid state fermentation (Koji), Batch fermentation and continuous fermentation.	**15**

UNIT - 2 : Downstream processing, General production strategies of microbial products and Enzyme immobilization	
Downstream processing- Definition, Stages in downstream processing. Methods of downstream processing: Precipitation, filtration, centrifugation, distillation, cell disruption, solvent recovery, drying and crystallization. **Microbial production of industrial products**: Industrial production and uses of Ethyl alcohol, wine, Penicillin, Citric acid, Amylase. Oyster mushroom and its nutritional value. **Enzyme immobilization**: Immobilized enzymes, Methods of Enzyme immobilization: Reversible immobilization- Adsorption, Irreversible immobilization- covalent coupling, entrapment, and copolymerization. Applications ofenzyme immobilization, Advantages and disadvantages of immobilized enzymes. Large scale application of immobilized enzyme – Glucose isomerase.	**15**
UNIT – 3 Genetic Engineering tools used in Strain improvement of microbes of industrial importance	
Introduction to genetic engineering: Definition, milestones in genetic engineering. Tools in genetic engineering: Restriction enzymes- Types, Mode of action, nomenclature, applications. DNA modifying enzymes and their applications: DNA polymerases, Methylases, Terminal deoxynucleotidyl transferases, Kinases, Phosphatase and DNA ligases. **Cloning Vectors and Cloning host**: Cloning Vectors- Definition and Properties. Characteristics ofcloning vectors. Plasmid vectors: pBR and pUC series. Bacteriophage lambda, Cosmids, BACs, YACs. Use of linkers and adaptors. Expression vectors: *Baculovirus* based vectors, mammalian SV40-based expression vectors. Cloning host- Cloning in *Escherichia coli* and *Saccharomyces cerevisiae*.	**15**
UNIT – 4 Genetic engineering techniques in industrial production of recombinantproducts	
Techniques in genetic engineering: Isolation of DNA, restriction digestion and ligation of DNA, Agarose gel electrophoresis, Blotting techniques, DNA sequencing- Maxam-Gilbert method of DNA sequencing, Sanger's method. PCR techniques – RT PCR, q PCR, Multiplex PCR and applications. DNA transfer methods: Physical - Microinjection, Biolistic, Electric- Electroporation,Chemical -Calcium phosphate mediated DNA transfer. Identification and selection of recombinants: DNA hybridization, blue white selection, colony and plaque hybridization. **Industrial production of recombinant products**: Products of human therapeutic interest - insulin, hGH, Bt - Cotton, Gene therapy, recombinant vaccines. Biological, ethical and social issues of gene cloning and IPR. Gene Library: Construction and application of cDNA and genomic libraries. Application of recombinant microorganisms in basic research, industry, medicine, agriculture, and environment.	**15**

References:

1. Arindam Kuila and Vinay Sharma (2018) Principles and Applications of Fermentation Technology,Wiley.
2. Casida L E.J.R. (2016) Industrial Microbiology, 2nd edition, New Age International Publisher.
3. Crueger W&A Crueger (2017). Cruegers Biotechnology: A Text Book of Industrial Microbiology.Edited by K.R. Aneja. Panima Publishing Corporation.
4. Michael, J.W., Neil L. Morgan (2013) Industrial Microbiology: an Introduction. Blackwell science
5. Nduka Okafor, Benedict Okeke (2017). Modern Industrial Microbiology and Biotechnology.2ndEdition :CRC Press Publishers
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8. Brown TA. (2010). Gene Cloning and DNA Analysis. 6th edition. Blackwell Publishing, Oxford, U.K.
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14. Watson JD, Baker TA, Bell SP et al. (2008) Molecular Biology of the Gene, 6th Ed.,Benjamin Cummings Wiley

Web links:

1. https://www.nature.com/subjects/industrial-microbiology
2. https://www.ncbi.nlm.nih.gov/books/NBK26837/
3. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3787205/
4. https://www.genome.gov/genetics-glossary/Recombinant-DNA-Technology
5. https://www.nature.com/scitable/definition/recombinant-dna-technology-dna-cloning-gene-cloning
6. https://www.ncbi.nlm.nih.gov/books/NBK26837/
7. https://microbialcellfactories.biomedcentral.com/articles

DSC (8): Practical: Industrial Microbiology

(4Hrs/week) 2 credits

1. Preparation of natural and synthetic media used in industry.
2. Production of amylase by solid substrate fermentation.
3. Preservation of industrial important microbes with glycerol/soil.
4. Preparation of wine from grapes.
5. Preparation of alcohol using jaggery/molasses.
6. Estimation of citric acid produced from *Aspergillus niger* by titrimetricMethod.
7. Estimation of % alcohol in a given sample by specific gravity bottle method
8. Cultivation and processing of edible Mushroom.
9. Preparation of buffers-TE, TAE and Lysis buffer.
10. Isolation of plasmid DNA from *Escherichia coli.*
11. Digestion of DNA with restriction enzymes.
12. Demonstration of amplification of DNA by PCR.
13. Demonstration of Southern blotting.
14. Demonstration of cloning of DNA inserts and Blue white screening ofrecombinants.
15. Study of specialized bioreactors, Microbial production of industrial products, Cloning vectors, Techniques in genetic engineering and recombinantproducts as per theory.

Note: Visit to distilleries and molecular biology laboratory.

COURSE ARTICULATION MATRIX – **232680**

CO/PO	PO 1	PO 2	PO3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO 12
CO 1	3	1	1	2	2	1	1	2	3	1	3	1
CO 2	3	2	2	2	3	3	1	2	3	3	3	2
CO 3	3	1	2	2	3	3	3	3	3	2	3	2
CO 4	3	3	3	2	3	3	3	3	3	3	3	2
Weighted Average	**3**	**1.75**	**2**	**2**	**2.75**	**2.5**	**2**	**2.5**	**3**	**2.25**	**3**	**1.75**

SEC (2): Internship

B.Sc. Microbiology

Semester VI

Course Code: 23INTMIB01	**Course Title:** SEC(2) **-** Internship
Course Credits: 02	**Hours of Teaching/Week:**
Total Contact Hours:	**90**
Formative Assessment Marks	**C1 -50**
	C2-50
	Total -100 marks

Note: This course will run as per the guidelines defined by the BoS Microbiology, University of Mysore, Mysuru and the same is approved by BoS, Microbiology, SBRR Mahajana First Grade College, Mysuru.

Course Outcomes (COs):

CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.

CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

COURSE ARTICULATION MATRIX – 23INTMIB01

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	-	1	1	3	3	2	2
CO 2	3	3	3	3	3	2	1	1	3	3	2	2
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**1**	**1**	**3**	**3**	**2**	**2**

Continuous Formative Evaluation/Internal Assessment (DSC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End PracticalExaminations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days ofsemester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examinationshall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed bythe concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	**C2 Marks**	**Total Marks**
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/CaseStudy/Field Work/Project Work/Quiz etc.		20	20
Total	20	20	40

For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the ratio is 25 (10 + 15):25).

Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.

The teachers concerned shall conduct test/seminar/case study etc., the students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencementof the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations (DSC)

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

  Part-A (C1): 10 marks

  Part-B (C2): 10 marks + Record: 05 marks = 15 marks
- The student is evaluated for 25 marks in C3 as per the following scheme:

Part A	Major question	08
Part B	Minor question	04
Identify and comment (Any four photographs: Decided by the External Examiner)		08
Viva Voce		05
TOTAL		**25**

Continuous Formative Evaluation/Internal Assessment (SEC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 20:30 for IA and Semester End Theory Examinations respectively and 25:25 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	50 Marks	50 Marks
Continuous Assessment – 1 (C1)	10 Marks	10 Marks
Continuous Assessment – 2 (C2)	10 Marks	15 Marks
Semester End Examination (C3)	30 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	**C2 Marks**	**Total Marks**
Session Test	10	-	10
Seminar/Presentation/Assignment/Activity/CaseStudy/Field Work/Project Work/Quiz etc.	-	10	10
Total	10	10	20

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance (the marks is 25 (10 + 15) and 25. Evaluated for a total 50 marks).
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., the students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations - SEC

C1 and C2 are internal tests to be conducted during 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated on the basis of procedure development and its execution. The student has to compulsorily submit the practical record for evaluation during C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

  Part-A (C1): 10 marks

  Part-B (C2): 10 marks + Record: 05 marks = 15 marks
- The student is evaluated for 25 marks in C3 as per the following scheme:

Part A	Major question	08
Part B	Minor question	04
Identify and comment (Any four photographs: Decided by the External Examiner)		08
Viva Voce		05
TOTAL		**25**

DSC V AND VI SEM -THEORY QUESTION PAPER PATERN

BSC MICROBIOLOGY

DURATION: 2½ Hours **MAXIMUM: 60 Marks**

Instructions: All questions are compulsory.
Draw neat labeled diagrams wherever necessary.

I. Define any FIVE of the following **5X2=10 Marks**

1. **(a)** **(b)**

(c) **(d)**

(e) **(f)**

(g)

II. Write short notes on any FIVE of the following **5X6=30 Marks**

(2) **(3)**

(4) **(5)**

(6) **(7)**

(8)

III. Explain any TWO of the following **2X10=20 Marks**

(9)

(10)

(11)

(12)

DSC V AND VI SEM PRACTICAL EXAMINATION PATTERN

Practical Examination – B.Sc. MICROBIOLOGY- C3

Duration: 3 hours	**Max. Marks: 25**
Q1. Major question	08 Marks
Q2. Minor question	04 Marks
Q3. Identify and Comment	4X2= 08 Marks
Q4. Viva- voce	05 Marks

SEC (1) V SEM -THEORY QUESTION PAPER PATERN

BSC MICROBIOLOGY

DURATION: 1½ Hours **MAXIMUM: 30 Marks**

Instructions: All questions are compulsory.
Draw neat labeled diagrams wherever necessary

I. Define any FIVE of the following **5X2=10 Marks**

1. **(a)** **(b)**

(c) **(d)**

(e) **(f)**

(g)

II. Explain any TWO of the following **2X10=20 Marks**

(2)

(3)

(4)

(5)

SEC (1) V SEM - PRACTICAL QUESTION PAPER PATERN

Practical Examination – B.Sc. MICROBIOLOGY- C3

Duration: 3 hours	**Max. Marks: 25**
Q1. Major question	08 Marks
Q2. Minor question	04 Marks
Q3. Identify and Comment	4X2= 08 Marks
Q4. Viva- voce	05 Marks

B.Sc. Microbiology Semester VI

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively of the semester. The student will be evaluated on the basis of presentation skills and project development. The student Internship may be full-time/part-time (full-time during semester holidays and part-time in the academic session). The students shall avail their discipline specific internship or project in any laboratory, companies or Research Institutes.

The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the department and the Mentor/Supervisor.

- **The student is evaluated for 100 marks in C1 and C2 as per the following scheme:**

Assessment Criteria	Marks
C1: Project Progress Presentation and Skills	**50**
C2: Project Development Skills and Report	**50**
Total	**100**

B.Sc. Microbiology SEMESTER V

Practical Examination – Scheme of Valuation (2023-24)

DSC -5: MICROBIAL GENETICS

Duration: 3 hours **Max. Marks: 25**

Q 1. Perform the Experiment **A** giving Principle and procedure, Record the result …… **08 Marks**

The following experiments is given for Question number 1

- Study of effect of Physical mutagens on bacterial cells
- Preparation of Master and Replica plates
- Study survival curve of bacteria after exposure to Ultraviolet light (UV))

Assessment:

(Demonstration - 4 marks, Principle - 1mark, Procedure – 2marks, Result – 1mark)

Q 2. Write the Protocol for the Experiment **B** giving principle and procedure……..……. **04 Marks**

The following experiments is given for Question number 2

- Preparation of competent cells for bacterial transformations.
- Isolation of DNA from microbial source.
- Isolation of Coliphages from sewage.

Assessment: (Principle – 2 marks, Procedure - 2Marks)

Q 3. Write the critical notes on **C, D, E** and **F.** **4X 2 = 08 Marks**

(Study of Griffith's experiment, conjugation, transduction, plasmid DNA, T4 phage, ordered tetrad analysis in *Neurospora*, Watson and Crick model of DNA, t RNA, semi-conservative replication ofDNA, bacterial RNA polymerase, transcription, translation and lac operon through schematic representations, results of the experiments).

Q 4. Viva-Voce **05 Marks**

B.Sc. Microbiology SEMESTER V

Practical Examination – Scheme of Valuation (2023-24)

Practical DSC-6: FOOD MICROBIOLOGY

Duration: 3 hours **Max. Marks: 25**

Q 1. Perform the Experiment **A** giving Principle and procedure,

Record the result …… **08 Marks**

The following experiments is given for Question number 1

- Standard analysis of water samples and Determination of MPN
- Biochemical differentiation of Enterobacteriaceae isolates by IMViC reactions
- Isolation of bacteria and fungi Spoiled Vegetables/Food Utensil
- Quantitative Examination of Bacteria in Raw and Pasteurized milk by SPC method.
- Methylene Blue Reductase test to determine the quality of milk.
- Determination of bacteriological quality of water by H2S paper strip test.

Assessment:

(Demonstration - 4 marks, Principle - 1mark, Procedure – 2marks, Result – 1mark)

Q 2. Write the Protocol for the Experiment **B** giving principle and procedure……..……. **04 Marks**

The following experiments is given for Question number 2

- Estimation of total solids of waste water from food processing unit.
- Microscopic examination of water samples for biological indicator microorganisms
- Isolation and Identification of *Aspergillus* on groundnut by blotters method
- Turbidity index for the detection of efficiency of sterilization of milk.

Assessment: (Principle – 2 marks, Procedure - 2Marks)

Q 3. Write the critical notes on **C, D, E** and **F.** **4X 2= 08 Marks**

(Display of Photographs of disease food crops: Citrus canker, Bacterial blight of Rice, Tikka disease of groundnut, Blast disease of Paddy, Papaya Ring Spot disease and Potato spindle tuber disease.

Display of photographs of Air samplers, Water purification process and Waste Water treatment, results of experiments).

Q 4. Viva-voce **05 Marks**

B.Sc. Microbiology SEMESTER V

Practical Examination – Scheme of Valuation (2023-24)

Practical SEC (1): MICROBIAL AND BIOCHEMICAL TECHNIQUES

Duration: 3 hours **Max. Marks: 25**

Q 1. Perform the Experiment **A** giving Principle and procedure,

Record the result …… **08 Marks**

The following experiments is given for Question number 1

- Estimation of CFU count by serial dilution- spread plate method/pour plate method.
- IMViC reactions
- Enzyme detection – Amylase, Gelatinase, lipase, caseinase, Catalase, and Oxidase test.

Assessment:

(Demonstration - 4 marks, Principle - 1mark, Procedure – 2marks, Result – 1mark)

Q 2. Write the Protocol for the Experiment **B** giving principle and procedure……..……. **04 Marks**

The following experiments is given for Question number 2

- Separation of mixtures by paper / thin layer chromatography.
- Cultivation of microorganisms: (i) Bacterial cultivation: (a) Streak-plate method (*E.coli, Staphylococcus aureus*) Streaking with inoculation loop. Streaking with toothpick. (b) Pour-plate method (*E.coli*).
- Study of colony characteristics on nutrient agar

Assessment: (Principle – 2 marks, Procedure - 2Marks)

Q 3. Write the critical notes on **C, D, E** and **F.** **4X 2 = 08 Marks**
(Oxidative-fermentative test, arginine hydrolysis, ornithine, lysine decarboxylase, nitrate, nitrite reduction, results of the experiments).

Q 4. Viva-voce **05 Marks**

B.Sc. Microbiology SEMESTER VI

Practical Examination – Scheme of Valuation (2023-24)

DSC -7: IMMUNOLOGY AND MEDICAL MICROBIOLOGY

Duration: 3 hours **Max. Marks: 25**

Q 1. Perform the Experiment **A** giving Principle and procedure,

Record the result …… **08 Marks**

The following experiments is given for Question number 1

- Identification of Human blood groups and Rh factor
- Perform Immunodiffusion by Ouchterlony method
- Study of bacterial flora of skin by swab method
- Perform Antibiotic Sensitivity by Kirby Bauer method.

Assessment:

(Demonstration - 4 marks, Principle - 1mark, Procedure – 2marks, Result – 1mark)

Q 2. Write the Protocol for the Experiment **B** giving principle and procedure…….....…… **04 Marks**

The following experiments is given for Question number 2

- Demonstration of Single Radial Immunodiffusion
- WIDAL test
- VDRL test

Assessment: (Principle – 2 marks, Procedure - 2Marks)

Q 3. Write the critical notes on **C, D, E** and **F.** **4X 2 = 08 Marks**

(Display of photographs of human pathogens: Mycobacterium tuberculosis, *Treponema pallidum, Vibrio cholerae, Salmonella typhi,* AIDS, Dengue, Corona, Histoplasmosis, Candidiasis and Athlete's foot.

Study of composition and use of important differential media for identification of pathogenic bacteria: EMB Agar, MacConkey agar, Mannitol salt agar, Deoxycholate citrate agar, TCBS agar results of the experiments).

Q 4. Viva-voce **05 Marks**

B.Sc. Microbiology SEMESTER VI

Practical Examination – Scheme of Valuation (2023-24)

Practical DSC-8: INDUSTRIAL MICROBIOLOGY

Duration: 3 hours **Max. Marks: 25**

Q 1. Perform the Experiment **A** giving Principle and procedure,

Record the result …… **08 Marks**

The following experiments is given for Question number 1

- Estimation of % alcohol in a given sample by specific gravity bottle method
- Estimation of Citric acid produced from *Aspergillus niger* by titrimetric method.

Assessment:

(Demonstration - 4 marks, Principle - 1mark, Procedure – 2marks, Result – 1mark)

Q 2. Write the Protocol for the Experiment **B** giving principle and procedure…….....…… **04 Marks**

The following experiments is given for Question number 2

- Preparation of Wine from grapes.
- Preparation of buffers – TE, TAE and Lysis buffer.
- Preparation of alcohol using Jaggery or molasses.
- Demonstration of Southern blotting.

Assessment: (Principle – 2 marks, Procedure - 2Marks)

Q 3. Write the critical notes on **C, D, E** and **F.** **4X 2 = 08 Marks**

(Study of specialized bioreactors, Microbial production of industrial products, Cloning vectors, Techniques in genetic engineering and recombinant products as per theory, results of the experiments).

Q 4. Viva-voce **05 Marks**

BOARD OF STUDIES

Sl. No	Name and address	Designation	Signature
1	Ms. Spandana N HOD, Department of Microbiology SBRR Mahajana First Grade College,(A) Mysuru 9449680239 spandanan.fgc@mahajana.edu.in	Chairperson	
2	Dr. Sreenivasa M Y Professor DOS in Microbiology, UOM, Manasagangotri, Mysuru 9449054480 sreenivasamy@gmail.com	Member	
3	Dr. Jamuna Bai A Assistant Professor Department of Microbiology, Faculty of Life Sciences, JSS – Academy of Higher Education and Research, Mysore 9480278098 jamunabhounsle@gmail.com	Member	A. Jamuna Bai 7/9/23
4	Dr. Sindhu R Assistant Professor Department of Microbiology, Faculty of Life Sciences, JSS – Academy of Higher Education and Research, Mysore 9986297935 sindhur@jssuni.edu.in	Member	
5	Dr. Chaitra Narayan Founder, Codagu Agritech-Eco, Plot no. 24/3 and 24/4, KIADB, Industrial area, kudlur PB #58, Kushalnagar -571234 9886299801 codagu.agritech.giu@gmail.com	Member	Member not present
6	Smt. Sushrutha Zeus Biotech Limited, Metagalli, Mysuru 8971703690 sushruthazeus@gmail.com	Member	Member not present

DEPARTMENT OF PHYSICS

Motto

Physics for Progress

Vision

Science and Technology for Better Future

Mission

Imparting Physics education with a professional approach to make citizens that are scientifically tempered to invent and discover

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis – Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions – Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research – Ability to formulate a hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5: Use of Modern Techniques/Tools – Use digital resources, various software/ platforms and appropriate techniques to interpret concepts of science.

PO 6: Impact of Science on Society – To prepare competent human resources and to develop scientific attitudes at local and global levels for social benefit.

PO 7: Environment and Sustainability – Apply the knowledge gained for conserving the environment and to handle environmental issues with sustainable solutions.

PO 8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain integrality in a professional scenario while being aware of cultural diversities.

PO 9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning – Engage in the art of self-directed learning.

List of BoS Members

Sl No	Category	Name & Designation	Address for Communication	Email & Mobile No.
1	Chairman	Sri. Manjunatha R Associate Professor & HoD	Department of Physics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	manjukalp@yahoo.com 9611075347
2	Members	Poornima S Assistant Professor	Department of Physics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	psmks2@gmail.com 9844815838
3		Gayathri V Assistant Professor	Department of Physics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	gayatrivasu94@gmail.com 9980859170
4	Two Experts from Other University	Smt. Rajeshwari S Associate Professor	Department of Physics MES Degree College Malleshwaram, Bengaluru	srfeb2166@gmail.com 9900945312
5		Smt. Rupa Shree M P Associate Professor	Department of Physics DRM Science College, Davangere	rupa2friends@gmail.com 9449773064
6	Nominee by the Vice Chancellor	Dr.M.A.Sridhar Professor	DOS in Physics, Manasagangothri, Mysuru.	mas@physics.uni-mysore.ac.in 0821-2419333
7	Alumnus	Smt. M. Sushma Assistant Professor	Department of Physics Yuvaraja's College, Mysuru.	sushmamraju77@gmail.com 9986163654

8	One Person from Industry/ Corporate Sector/Allied Area	Dr.A.Chandrashekara Officer-in charge of help Physics unit	Officer-in charge of help Physics unitUCIL, MC Palle, Kadapa dist. Andrapradesh.	chandrabasav@yahoo.co.in 9481149674

Course Structure (NEP 2020)

Discipline Specific Courses (DSC) and Open Elective (OE)

I Year

Course type, code and Title		Hours/week		Credits	Maximum Marks			Exam Duration	Total
		L	T/P	L: T: P	C1	C2	C3		Marks
Physics- I Sem									
DSC(1) 212129	Mechanics and Properties of Matter	4	0	4:0:2 6 credits	20	20	60	$2\frac{1}{2}$ hours	150
	DSC(1)- Lab	0	4		10	15	25	3 hours	
OE(1)	**Energy Sources** 21OEPHY101 / **Climate Science** 21OEPHY102	3	0	3:0:0 3credits	20	20	60	$2\frac{1}{2}$ hours	100
Note: OE Any one to be selected									
Physics- II Sem									
DSC(2) 212229	Electricity and Magnetism	4	0	4:0:2 6 credits	20	20	60	$2\frac{1}{2}$ hours	150
	DSC(2)- Lab	0	4		10	15	25	3 hours	
OE(2)	**Astronomy** 21OEPHY201 / **Medical Physics** 21OEPHY202	3	0	3:0:0 3credits	20	20	60	$2\frac{1}{2}$ hours	100

Note: OE Any one to be selected

DSC(1) Syllabus for B.Sc. Physics (Basic and Honors)

Semester I

Course Code: 212129	**Course Title:** DSC(1)- Mechanics and Properties of Matter (Theory) DSC(1)-lab
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester-End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs)	
CO1	Implementation of data on Units and measurement, Special theory of relativity. For tabulation and Monitoring of data to comprehend the accuracy of measurements and to analyze the sources of errors. And, also to gain knowledge of Energy and Momentum.
CO2	Analyze laws of motion and gravitational law and also acquire knowledge of momenta of inertia of different rigid bodies.
CO3	Implementation of various moduli of elasticity by experimental method to comprehend its applications.
CO4	Implement the experimental techniques adopted to evaluate surface tension and viscosity.

Course Content

Content	Hrs
Unit – 1	
Units and measurements: System of units (CGS and SI), measurement of length, mass and time, dimensions of physical quantities, dimensional formulae. Minimum deviation, errors. **Momentum and Energy**: Work and energy, Conservation of momentum (linear). Conservation of energy with examples. Motion of rockets. **Special Theory of Relativity:** Constancy of speed of light. Postulates of Special Theory of Relativity. Length contraction. Time dilation. Relativistic addition of velocities. Numerical problems.	12
Suggested Activities	02
Activity No. 1 (i) Students can measure the diameters of small balls of different sizes and estimate their volumes. (ii) Students can measure the lengths of nails of different sizes. (iii) Students can measure the volume of a liquid (iv) Students can measure distances and put the result both in CGS and SI units in 2, 3 and 4 significant figures. Ask them to mention the precession of the measurement. (v) Students can estimate standard deviations wherever possible.	
Activity No. 2 Students can try and understand the conservation of energy in everyday examples. For example: (i) What happens in solar conservation panels (ii) Pushing an object on the table it moves (iii) A moving car hits a parked car and causes the parked car to move. In these cases, energy is conserved. How? Understand and verify if possible.	
Unit – 2	
Laws of Motion: Newton's Laws of motion. Dynamics of single and a system of particles. Centre of mass. Numerical problems. **Dynamics of Rigid bodies**: Rotational motion about an axis, Relation between torque and angular momentum, Rotational energy. moment of inertia: M I of a rectangular Lamina and solid cylinders. Flywheel, Theory of compound pendulum and determination of g. Numerical problems. **Gravitation:** Law of Gravitation. Motion of a particle in a central force field (motion is in a plane, angular momentum is conserved, areal velocity is constant). Kepler's laws (statements). Satellite in a circular orbit. Numerical problems.	12

Suggested Activities		02
Activity No. 3	Moment of inertia is an abstract concept. It simply gives a measure of the rotational inertia of a rigid body and it is proportional to the product of the square of the radius, r of the body and its mass, m. Students by referring to websites, can construct and perform simple experiments to verify that MI α mr^2. Reference: www.khanacademy.org, www.pinterest.com, www.serc.cerleton.edn	
Activity No. 4	Activity: Prepare suitable charts and give seminar talks in the class.	
Unit – 3		
Elasticity: Hooke's law - Stress-strain diagram, elastic moduli-relation between elastic constants, Poisson's Ratio-expression for Poisson's ratio in terms of elastic constants. Work done in stretching and work done in twisting a wire-Twisting couple on a cylinder. Torsional pendulum-Determination of rigidity modulus and moment of inertia - q, η and σ by Searle's method. Numerical problems.		12
Suggested Activities		02
Activity No. 5	Arrange a steel spring with its top fixed with rigid support on a wall and a meter scale alongside. Add 100 g load at a time on the bottom of the hanger in steps. This means that while putting each 100g load, we are increasing the stretching force by 1N. Measure the extension for loads up to 500g. Plot a graph of extension versus load. The shape of the graph should be a straight line indicating that the ratio of load to extension is constant. Go for higher loads and find out the elastic limit of the material.	
Activity No. 6	Repeat the above experiment with rubber and other materials and find out what happens after exceeding the elastic limit. Plot and interpret.	
Unit –4		
Surface tension: Definition of surface tension. Surface energy, the relation between surface tension and surface energy, the pressure difference across the curved surface example, excess pressure inside the spherical liquid drop, and angle of contact. Numerical problems. **Viscosity:** Streamline flow, turbulent flow, equation of continuity, determination of coefficient of viscosity by Poisulle's method, Stoke's method. Numerical problems.		12
Topics for self-study (If any) Capillarity determination of surface tension by drop weight method.		

Suggested Activities	02
Activity No. 7	Measure the surface tension of water and other common liquids and compare and learn (i) Why water has high ST? think of reasons. (ii) Check whether ST is a function of temperature? You can do it by heating the water to different temperatures and measuring ST. (iii) Plot ST versus T and learn how it behaves. Mix some quantity of kerosene or any oil to water and measure ST. Check whether ST for the mixture is more or less than pure water. List the reasons.
Activity No. 8	Collect a set of different liquids and measure their viscosity. (i) Find out whether sticky or non-sticky liquids are the most viscous. List the reasons. (ii) Mix the nonsticky liquid with the sticky liquid in defined quantities and measure viscosity. Find out if the viscosity is increasing or decreasing with an increase in non-sticky liquid concentration. (iii) Do the above experiment by mixing sticky liquid with nonsticky liquid. Find out the change in viscosity with an increase in the concentration of sticky liquid. List the applications where the concept of Viscosity plays a dominant role

Textbooks

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1.	Mechanics	D. S. Mathur	S.Chand & Co.	2000
3.	Mechanics Berkeley Physics Course, Vol.1:	Charles Kittel, *et.al*.	Tata McGraw-Hill	2007
4.	Properties of Matter	Brijlal & Subramanyam.	Eurasia Publishing House Limited,	1993

References Books

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1.	Physics. 9th Edn,	Resnick, Halliday & Walter,	Wiley	2010
2.	Physics Vol-I	Halliday and Resnick,		

Weblinks

- https://www.fullonstudy.com/bsc-1st-year-physics-notes
- https://byjus.com/chemistry/properties-of-matter/
- https://edscl.in/course/view.php?id=347&section=3

DSC(1) lab

List of Experiments

Credit : L:T:P 0:0:2

(Minimum EIGHT experiments must be completed)

Sl No	Experiments
1	Determination of g using bar pendulum.
2	Determination of the moment of inertia of a Fly Wheel.
3	Determination of rigidity modulus using a torsional pendulum.
4	Modulus of rigidity of a rod – Static torsion method.
5	Determination of elastic constants of a wire by Searle's method.
6	Young's modulus by Koenig's method.
7	Viscosity by Stoke's method.
8	Verification of Hook's law.
9	Determination of surface tension of a liquid and the interfacial tension between two liquids using the drop weight method.
10	Study of motion of the spring and to calculate the Spring constant, g and unknown mass.
11	Determination of Young's modulus of a bar by the single cantilever method.
12	Determination of Young's modulus of a bar by uniform bending method.
13	The radius of the capillary tube by mercury pellet method.
14	Verification of parallel and perpendicular axis theorems.

Reference Book for Laboratory Experiments

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Physics through experiments	B.Saraf	Vikas Publications	2013
2	A lab manual of Physics for undergraduate classes, 1st Edition,		Vikas Publications.	
3	BSc Practical Physics Revised Ed	CL Arora	S.Chand & Co.	2007
4	An advanced course in practical physics.	D. Chattopadhyay, PC Rakshit, B.Saha	New Central Book Agency Pvt Ltd.	2002

Course Articulation Matrix- Course code 212129												
Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	1	1	1	2	2	2	1	1	2	___	2
CO2	3	2	1	1	2	2	2	1	1	1	___	2
CO3	3	2	1	1	2	2	2	1	2	2	1	2
CO4	3	2	1	1	2	2	2	1	2	1	1	2
Weighted average	**3**	**1.75**	**1**	**1**	**2**	**2**	**2**	**1**	**1.5**	**1.5**	**1**	**2**

OE Physics Syllabus for All Programs (Except Science)

Semester I

Course Code: 21OEPHY101	**Course Title:** OE(1): Energy Sources
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester-End Examination Marks:** 60

Course Outcomes (COs)	
CO1	Acquiring knowledge of energy concepts and conventional energy sources in nonrenewable energy sources.
CO2	Gaining knowledge of renewable energy sources and solar energy with their applications.
CO3	Comprehending the knowledge of wind energy, tidal energy harvesting, geothermal and hydro energy utilization.

Course Content

Content	Hrs
Unit – 1: Non-Renewable energy sources	
Introduction: Energy concept-sources in general, its significance & necessity. Classification of energy sources: Primary and Secondary energy, Commercial and Non-commercial energy, Renewable and Non-renewable energy, Conventional and Non-conventional energy, Based on Origin-Examples and limitations. Importance of Non-commercial energy resources.	05
Conventional energy sources: Fossil fuels & Nuclear energy- production & extraction, usage rate and limitations. Impact on environment and their issues& challenges. Overview of Indian & world energy scenario with latest statistics-consumption & necessity. Need of eco-friendly & green energy & their related technology.	08
Unit – 2: Renewable energy sources	
Introduction: Need of renewable energy, and non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, biochemical conversion, biogas generation, geothermal energy tidal energy, and Hydroelectricity.	05
Solar Energy-Key features its importance, Merits & demerits of solar energy, and Applications of solar energy. Solar water heater, flat plate collector, solar distillation, solar cooker, solar greenhouses, solar cell -a brief discussion of each. Need and characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, and sun-tracking systems.	08
Unit – 3	
Wind and Tidal Energy harvesting: Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies. Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices. Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy.	08
Geothermal and hydro energy: Geothermal Resources, Geothermal Technologies. Hydropower resources, hydropower technologies, and the environmental impact of hydropower sources. Carbon-captured technologies, cell, batteries, power consumption.	05

Suggested Activities	03
1. Demonstration of Solar energy, wind energy, etc, using training modules at Labs. 2. Conversion of vibration to voltage using piezoelectric materials. 3. Conversion of thermal energy into voltage using thermoelectric (using thermocouples or heat sensors) modules. 4. Project report on Solar energy scenario in India 5. Project report on Hydro energy scenario in India 6. Project report on wind energy scenario in India 7. Field trip to nearby Hydroelectric stations. 8. Field trip to wind energy stations like Chitradurga, Hospet, Gadag, etc. 9. Field trip to solar energy parks like Yeramaras near Raichur. Videos on solar energy, hydro energy and wind energy.	

Text books

1. Non-conventional energy sources - G.D Rai - Khanna Publishers, New Delhi
2. Solar energy - M P Agarwal - S Chand and Co. Ltd.
3. Solar energy - Suhas P Sukhative Tata McGraw - Hill Publishing Company Ltd.

Reference books

1. Godfrey Boyle, "Renewable Energy, Power for a sustainable future", 2004, Oxford University Press, in association with The Open University.
2. Dr. P Jayakumar, Solar Energy: Resource Assessment Handbook, 2009
3. J.Balfour, M.Shaw and S. Jarosek, Photovoltaics, Lawrence J Goodrich (USA).

Weblinks

- http://en.wikipedia.org/wiki/Renewable_energy
- https://www.energy.gov/energy-sources
- https://www.eia.gov/energyexplained/what-is-energy/sources-of-energy.php

Course Articulation Matrix- 21OEPHY101

Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	1	2	2	2	1	1	1	___	1
CO2	3	2	2	1	2	2	2	1	2	1	1	1
CO3	3	1	2	1	2	2	2	1	2	1	1	1
Weighted average	**3**	**1.66**	**2**	**1**	**2**	**2**	**2**	**1**	**1.66**	**1**	**1**	**1**

OE Physics Syllabus for All Programs (Except Science)

Semester I

Course Code: 21OEPHY102	**Course Title:** OE(2): Climate Science
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester-End Examination Marks:** 60

Course Outcomes (COs)	
CO1	Developing knowledge about atmospheric science as a multidisciplinary concept.
CO2	Analyze the impact of atmospheric circulation on world climate and the influence of meteorological parameters and atmospheric stability.
CO3	Evaluate the contribution of greenhouse gases in Global warming and thereby bringing change in the climate.

Course Content

Content	Hrs
Unit – 1: Atmosphere	
Atmospheric Science (Meteorology) is a multidisciplinary science. Physical and dynamic meteorology, Some terminology, the difference between weather and climate, weather and climate variables, the composition of the present atmosphere: fixed and variable gases, volume mixing ratio (VMR), sources and sinks of gases in the atmosphere. Greenhouse gases. Structure (layers) of the atmosphere. Temperature variation in the atmosphere, temperature lapse rate, mass, pressure and density variation in the atmosphere. Distribution of winds.	13
Unit – 2: Climate Science	
Overview of meteorological observations, measurement of: temperature, humidity, wind speed and direction and pressure. Surface weather stations, upper air observational network, satellite observation. Overview of clouds and precipitation, aerosol size and concentration, nucleation, droplet growth and condensation (qualitative description). Cloud seeding, lightning and discharge. Formation of trade winds, cyclones. Modeling of the atmosphere: General principles, Overview of General Circulation Models (GCM) for weather forecasting and prediction. Limitations of the models. R and D institutions in India and abroad dedicated to climate Science, NARL, IITM, CSIR Centre for Mathematical Modeling and Computer Simulation, and many more	13
Unit – 3: Global Climate Change	
Greenhouse effect and global warming, Enhancement in concentration of carbon dioxide and other greenhouse gases in the atmosphere, Conventional and non-conventional energy sources and their usage. EL Nino/LA Nino Southern oscillations. Causes for global warming: Deforestation, fossil fuel burning, industrialization. Manifestations of global warming: Sea level rise, melting of glaciers, variation in monsoon patterns, increase in frequency and intensity of cyclones, hurricanes, and tornadoes. Geo-engineering as a tool to mitigate global warming? Schemes of geoengineering.	13
Suggested Activities	03
1. Try to find answer to the following questions: (a) Imagine you are going in a aircraft at an altitude greaten than 100 km. The air temperature at that altitude will be greater than 200ºC. If you put your hands out of the window of the aircraft, you will not feel hot. (b) What would have happened if ozone is not present in the stratosphere?	

2. Visit a nearby weather Station and learn about their activities.
3. Design your own rain gauge for rainfall measurement at your place.
4. Learn to determine atmospheric humidity using the wet bulb and dry bulb thermometers.
5. Visit the website of the Indian Institute of Tropical Meteorology (IITM), and keep track of the occurrence and landfall of cyclone prediction.
6. Learn about the ozone layer and its depletion and ozone hole.
7. Keep track of the melting of glaciers in the Arctic and Atlantic region through a database available over several decades.

Watch documentary films on global warming and related issues (produced by amateur filmmakers and promoted by British Council and BBC).

References Books

1. Basics of Atmospheric Science – A Chandrashekar, PHI Learning Private Ltd. New Delhi, 2010.
2. Fundamentals of Atmospheric Modelling- Mark Z Jacbson, Cambridge University Press, 2000.

Weblinks

- https://climatescience.org
- https://wild.org/climate/
- https://warmheartworldwide.org/climate-change/

Course Articulation Matrix- 21OEPHY102

Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	1	1	1	2	2	2	1	1	1	___	1
CO2	3	1	1	1	2	2	2	1	2	1	___	1
CO3	3	2	2	1	2	2	2	1	2	1	1	1
Weighted average	**3**	**1.33**	**1.33**	**1**	**2**	**2**	**2**	**1**	**1.66**	**1**	**1**	**1**

DSC(2) Syllabus for B.Sc. Physics (Basic and Honors)

Semester II

Course Code: 212229	**Course Title:** DSC(2)- Electricity and Magnetism (Theory) DSC(2)-lab
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester-End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs)	
CO1	Comprehend Gauss Law, and Coulomb's law applying for point charges, and line charges and also differentiate the vector formalisms of Electrostatics.
CO2	Acquiring knowledge of Conductors in the Electrostatic field and to Analyse the properties of circuit elements.
CO3	Accomplishing the experimental laws of Magnetism and obtaining resonance in an LCR circuit
CO4	Analyzing Maxwell's equation in Electromagnetic waves to acquire knowledge of Electric current and Magnetism.

Course Content

Content	Hrs
Unit – 1	
Electric charge and field, Coulomb's law, electric field strength, electric field lines, point charge in an electric field and electric dipole, work done by a charge (derivation of the expression for potential energy). Numerical problems.	03
Gauss's law and its applications (electric fields of an (i) spherical charge distribution, (ii) line charge and (iii) an infinite flat sheet of charge). Numerical problems.	03
Electric potential, line integral, the gradient of a scalar function, and the relation between field and potential. Potential due to point charge and distribution of charges (Examples: potential associated with a spherical charge distribution, infinite line charge distribution, an infinite plane sheet of charges). Constant potential surfaces, Potential due to a dipole and electric quadrupole. Numerical problems.	06
Suggested Activities	02
Activity No. 1	1. Learn the difference between and DC and AC electricity and their characteristics. Voltage and line frequency standards in different countries. 2. A small project report on the production of electricity as a source of energy: Different methods.
Activity No. 2	1. Learn to use a multimeter (analog and digital) to measure voltage, current and resistance. Continuity testing of a wire. 2. Learn about household electrical connection terminals: Live, neutral and ground and the voltage between the terminals. Role of earthing and safety measures.
Unit – 2	
Conductors in an electrostatic field Conductors and insulators, conductors in electric field. Capacitance and capacitors, calculating capacitance in a parallel plate capacitor, parallel plate capacitor with dielectric, dielectrics: an atomic view. Energy stored in a capacitor, Dielectric and Gauss's law.	06
Electric currents and current density. Electrical conductivity and Ohm's law. Physics of electrical conduction, conduction in metals and semiconductors, circuits and circuit elements: Variable currents in capacitor circuits, Resistor, inductor and capacitor and their combination. force on a moving charge.	06

Suggested Activities		02
Activity No. 3	1. Learn about electrical appliances which work with AC and DC electricity 2. Learn about types of resistors and their colour codes and types of capacitors(electrolytic and non-electrolytic)	
Activity No. 4	1. Learn about power transmission: 3-phase electricity, voltage and phase 2. Visit a nearby electrical power station. Interact with linemen, Electrical engineers and managers. Discuss power loss in transmission. How to reduce it? 3. Prepare a small project report on street lighting and types of electrical bulbs..	
Unit – 3		
Magnetism Definition of the magnetic field, Ampere's law and Biot-Savart law (magnetic force and magnetic flux), Magnetic force on a current carrying conductor, Hall effect. Electromagnetic induction, conducting rod moving in a magnetic field, law of induction and mutual inductance, self-inductance and energy stored in a magnetic field.		06
Alternating current circuits: Resonant circuit, alternating current, quality factor, RL, RC, LC, LCR circuits, admittance and impedance, power and energy in AC circuits.		06
Suggested Activities		02
Activity No. 7	1. Prepare a small project report on street lighting and types of electrical bulbs. **2.** Learn the measurement of electric current using a tangent galvanometer.	
Activity No. 8	Build a small coil with insulated copper wire. Connect an ammeter micro/milli ammeter. Verify magnetic induction using a powerful bar magnet.	
Unit – 4		
Electromagnetic waves: Equation of continuity, Maxwell's equations, displacement current, electromagnetic wave, energy transported by electromagnetic waves. Electromagnetic waves in different frames of reference, Field of a current loop, magnetic moment, Electric current in atoms, electron spin and magnetic moment, magnetization and magnetic susceptibility.		08
Types of magnetic materials: diamagnetic, paramagnetic and ferromagnetic materials. B-H hysteresis curves and its characteristics Ferrites.		04

Suggested Activities	02
Activity No. 7	1. Prepare a small project report on production of magnetic field: Permanent magnets, electromagnets and superconducting magnets. 2. Learn the principle of working of a Gauss meter to measure magnetic field
Activity No. 8	Model the earth's magnetic field with a diagram. Explain the effect of tilt of the earth's axis and reasons for the change in the tilt of the earth's axis over thousands of years.

References Books

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Physics-Part-II,	David Halliday and Robert Resnick	Wiley Eastern Limited	2001
2	Berkeley Physics Course, Vol-2, Electricity and Magnetism, Special Edition	Edward M Purcell	Tata Mc Graw-Hill Publishing Company Ltd, New Delhi	2008

Weblinks

- https://faculty.wcas.northwestern.edu/infocom/Ideas/
- https://www.toppr.com/guides/physics/electromagnetism/electricity-and-magnetism/
- https://www.electricityforum.com/electricity-and-magnetism

DSC(2) lab

List of Experiments **Credit : L:T:P**

0:0:2

(Minimum EIGHT experiments must be completed)

1	Experiment to determine the low resistance and hence to determine the specific resistance of the material of the wire.
2	Determination of components of earth's magnetic field using a Ballistic galvanometer.
3	Determination of capacitance of a condenser using B.G.
4	Determination of high resistance by leakage using B.G.
5	Determination of mutual inductance using BG.
6	Charging and discharging of a capacitor (energy dissipated during charging and time- constant measurements.
7	Series and parallel resonance circuits (LCR circuits).
8	The impedance of series RC circuits- determination of the frequency of AC.
9	Study the characteristics of a series RC and RL Circuit.
10	Determination of self-inductance of a coil.
11	Verification of laws of combination of capacitances and determination of unknown capacitance using the de-Sauty bridge.
12	Determination of BH using Helmholtz double coil galvanometer and potentiometer

Course Articulation Matrix-Course code 212229												
Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	1	1	1	2	2	2	1	2	1	1	2
CO2	3	2	1	1	2	2	2	1	2	1	1	2
CO3	3	2	1	1	2	2	2	1	2	2	1	2
CO4	3	3	1	1	2	2	2	1	2	2	1	2
Weighted average	**3**	**2**	**1**	**1**	**2**	**2**	**2**	**1**	**2**	**1.5**	**1**	**2**

OE Physics Syllabus for All Programs (Except Science)

Semester II

Course Code: 21OEPHY201	**Course Title:** OE(3): Astronomy
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester-End Examination Marks:** 60

Course Outcomes (COs)	
CO1	Gaining knowledge of Ancient Indian, Medieval and modern astronomy and Comprehending tool and methods implemented to observe heavenly bodies.
CO2	Acquiring knowledge of the solar system.
CO3	Monitoring the prominent stars and constellations visible during stipulated periods.

Course Content

Content	Hrs
Unit – 1: History and Introduction	
Ancient Astronomy Greek Observations, Sumerian Observations, Mayan Observations, Arabic Observations, and Chinese Observations.	03
Indian Astronomy Vedic Astronomy, Ancient Astronomy – Aryabhata, Varahamihira, Bhaskara Astronomy in Indian Scriptures, Precession of the Equinox, Celebrations of Equinox.	03
Medieval & Modern Astronomy The invention of Telescopes, Models of the Solar System & Universe, Observations by Tycho Brahe, Kepler, Galileo, Herschel and Others, and Modern Astronomy.	02
Optical tools for Astronomy Pin Hole, Binoculars, Telescopes & Imaging. Mathematical Methods of Observations Angular Measurement, Trigonometric functions, Stellar Parallax Observational Terminologies Cardinal Directions, Azimuth, Altitude, Measurements using Compass and Hand. Equatorial Coordinates, Light years, Magnitude, Colors, etc.	05
Unit – 2: Observations of the Solar System	
The Sun Ecliptic and the Orientation of the Earth, Seasons - Solstices and Equinox, Observations of the Sun from Earth during seasons. Eclipses, Zero-shadow day, The Moon Earth-Moon system – Phases, Lunar Eclipses, Ecliptic and Lunar Orbital Plane – Nodes, Lunar Month, Full Moon Names. Inner Planets: Mercury & Venus Observational History, Observational Windows, Appearance, Apparitions, Elongations, Superior Conjunctions, Inferior Conjunctions, Transits. Outer Planets Outer Planets: Mars, Jupiter & Saturn Observational History. Observational Windows, Appearance, Frequency of Oppositions, Conjunctions, Moons Eclipses. Galilean Moons, Saturn's Rings	13

Unit – 3: Major Astronomy Observations	
March to June Prominent Stars and Constellations Visible during this period, Methods of Spotting June to September Prominent Stars and Constellations Visible during this period, Methods of Spotting. September to December Prominent Stars and Constellations Visible during this period, Methods of Spotting. December to March Prominent Stars and Constellations Visible during this period, Methods of Spotting.	13
Suggested Activities	03
Experiment **1.** Measuring Seasons using Sun's Position. **2.** Measuring Distance using Parallax **3.** Estimation of the Stellar Diameter using Pin Hole **4.** Measuring Height of an Object Using Clinometer. **5.** Star spotting using constellation maps **6.** Constellation spotting using Skymaps **7.** Estimation of 'Suitable Periods' to observe deep sky objects using Planisphere. **8.** Estimation of the Size of the Solar System in using Light Years. **9.** Identification of Lunar Phases across a year. **10.** Measuring the Constellation of the Sun using Night Skymaps or Planispheres.	

Text Books

1. P. N. SHANKAR A GUIDE TO THE NIGHT SKY
2. Biman Basu, Joy of Star Watching, National Book Trust of India 2013

Reference books

1. The Stargazer's Guide - How to Read Our Night Sky by Emily Winterburn
2. A guide to the Night Sky – Beginner's handbook by P.N. Shankar
3. The Complete Idiot's Guide to Astronomy by Christopher De Pree and Alan Axelrod
4. Christopher De Pree: The Complete Idiot's Guide to Astronomy, Penguin USA, 2008.
5. Emily Winterburn, The Stargazer's Guide: How to Read Our Night Sky, Constable and Robinson, 2008.

Weblinks

- https://www.arvindguptatoys.com/arvindgupta/nightskyshankar.pdf
- https://egyankosh.ac.in/

Course Articulation Matrix- 21OEPHY201												
Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	1	1	1	2	2	1	1	1	1	___	1
CO2	3	1	1	1	2	2	1	1	1	1	1	1
CO3	3	1	1	2	2	2	----	1	1	1	----	1
Weighted average	**3**	**1**	**1**	**1.33**	**2**	**2**	**1**	**1**	**1**	**1**	**1**	**1**

OE Physics Syllabus for All Programs (Except Science)

Semester II

Course Code: 21OEPHY202	**Course Title:** OE(4): Medical Physics
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester-End Examination Marks:** 60

Course Outcomes (COs)	
CO1	Developing knowledge about human anatomy and physiology.
CO2	Analyze the knowledge in the field of Physics in medical diagnostics instruments.
CO3	Acquire knowledge about the physics behind radiotherapy.

Course Content

Content	Hrs
Unit – 1: Human Anatomy and Physiology	
Overview of human anatomy - cells, cell structure, type of cells and their functions, tissues, organs, and their functions. Different systems in the human body, their structure and function, physiological properties of the circulatory system, digestive system, respiratory system, reproductive system, excretory system, endocrine system and nervous system.	13
Unit – 2: Physics of Medical Diagnostics	
Principle of production of X-rays. Use of X-rays in medical diagnosis, X-ray imaging systems. Computed Tomography (CT): principle and generation of CT. Magnetic Resonance Imaging (MRI): basic principle and image characteristics. Ultrasound Imaging: Interaction of sound waves with body tissues, production of ultrasound, transducers, acoustic coupling, image formation, modes of image display and color Doppler.	13
Unit – 3: Physics of Radiotherapy	
Clinical aspects of radiation therapy: Biological basis of radiotherapy, radiation sources, radiation dose, time dose fractionation. External beam radiation therapy, radiation therapy modalities, production of radioisotopes, use of radioisotopes in therapy, particle and ion beam radiotherapy. Brachytherapy - the principle of brachytherapy and classification of brachytherapy techniques.	13
Suggested Activities	03
Class Room Activities- 1-3	

Activity No. 1	Students can demonstrate the shape, size, positions and functions of different organs in the body with the help of models.
Activity No. 2	The use of X-rays in the diagnosis of the fractured bone can be demonstrated with the help of a gamma source and a gamma ray survey meter. As the density of materials between the source and the detector changes the reading on the meter (or intensity of the beefing sound) changes.
Activity No. 3	i) Students can be asked to list out different type of cancers and possible causative factors. They can be asked to list out the healthy practices to reduce the risk of cancers. (ii) As there will be students from different disciplines in the OE course, group discussion can be arranged to discuss about their programme and outcome. This will be an opportunity for the students to know about other disciplines.

Activity No. 4	**Other related activities/projects:** 1. Visit nearby hospitals/diagnostic centers to study the working of X-ray machines. 2. Visit ultrasound diagnostic centers to study the principle and use of ultrasound in diagnosis. 3. Project on principle and use of X-ray films in imaging. 4. Visit radiotherapy centers to study the modalities of radiotherapy.

Text Books

1. C. H. Best and N. B. Taylor. A Test in Applied Physiology. Williams and Wilkins Company, Baltimore, 1999.
2. C. K. Warrick. Anatomy and Physiology for Radiographers. Oxford University Press, 2001.
3. Jerrold T. Bushberg. The Essential Physics for Medical Imaging (2nd Edition). Lippincott Williams & Wilkins, 2002.
4. Jean A. Pope. Medical Physics: Imaging. Heinemann Publishers, 2012.
5. Faiz M. Khan and Roger A. Potish. Treatment Planning in Radiation Oncology. Williams and Wilkins,
6. D. Baltas. The physics of modern brachytherapy for oncology. Taylor and Francis, 2007.

Reference book s

1. J. R. Brobek. Physiological Basis of Medical Practice. Williams and Wilkins, London, 1995.
2. Edward Alcamo, Barbara Krumhardt. Barron's Anatomy and Physiology the Easy Way. Barron's Educational Series, 2004.
3. Lippincott, Anatomy and Physiology. Lippincott Williams & Wilkins, 2002.
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- https://aapm.onlinelibrary.wiley.com/journal/24734209
- https://en.wikipedia.org/wiki/Medical_physics
- https://www.medphys.org/

Course Articulation Matrix- 21OEPHY202

Mapping of Course Outcomes (CO) Program Outcomes(PO)

Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	1	1	1	2	2	1	1	1	1	___	1
CO2	3	1	1	1	2	2	1	1	2	1	___	1
CO3	3	1	1	1	2	2	1	1	2	1	1	1
Weighted average	**3**	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**1.66**	**1**	**1**	**1**

Continuous Formative Evaluation/ Internal Assessment

Total marks for each course shall be based on continuous assessments and semester-end examinations. The pattern of 40:60 for IA and Semester End theory examinations respectively and 50:50 for IA and Semester End practical examinations respectively.

	Theory	Practical
Total Marks for each Course	100 marks	50 marks
Continuous assessment-1 (C1)	20 marks	10 marks
Continuous assessment-2 (C2)	20 marks	15 marks
Semester End Examination (C3)	60 marks	25 marks

The evaluation process of IA marks shall be as follows:

a) The first component (C1) of the assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, fieldwork, project work, etc. This assessment and score process should be completed after completing 50% of the syllabus of the course/s and within 45 working days of the semester program

b) The second component (C2) of the assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum/project work, etc. This assessment and score process should be based on the completion of the remaining 50 percent of the syllabus of the courses of the semester.

c) During the 17th – 19th week of the semester, a semester-end examination shall be conducted by the University for each Course. This forms the third and final component of the assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on the scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct a special test for such candidate on the date fixed by the concerned teacher but before the commencement of the concerned semester-end examinations.

e) For assignments, tests, case study analysis, etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets, etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests/assignment/work, etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under.

	C1 marks	C2 marks	Total Marks
Session Test	20	---	20
Seminars/Presentations/Activity/ Case study /Assignment / Fieldwork / Project work etc.	---	20	20
Total	20	20	40

- For the practical course of full credits, the Seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance. (the ratio is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test, Seminar, Case study / Assignment, etc. can be either in C1 or in the C2 component at the convenience of the concerned departmet/teacher.
- The teachers concerned shall conduct test / seminar / case study, etc. The students should be informed about the modalities well in advance. The evaluated course assignments during component I (C1) and component II (C2) of the assessment are immediately provided to the candidates after obtaining acknowledgment in the register by the concerned teachers(s) and maintained by the Department. Before the commencement of the semester-end examination, the evaluated test, assignment, etc. of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The Internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during the 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated based on skill, comprehension and recording of the results. The student has to compulsorily submit the practical record for evaluation during C1 and C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following

scheme: Experiment: 10 for C1 (10 marks)

Experiment: 10, Record: 05 for C2 (15 marks)

- The student is evaluated for 25 marks in C3 as per the following

scheme: Experiment: 20, Viva: 05 for C3 (25 marks)

The experimental portion of the evaluation (C3) is carried out as per the following scheme:

formula with proper units and explanation	03
Setting up the apparatus/circuit connections	03
Taking readings and tabulating	07
Calculations and Graph	07
Viva	05
Total	25

DSC THEORY QUESTION PAPER PATTERN FOR I AND II SEMESTER

Max Marks: 60 Exam duration: $2\frac{1}{2}$ hours

Part-A

I. One question from each unit is to be given with an internal choice. Each question carries 10 marks $4 \times 10 = 40$

1 (a)
OR
(a)

2 (a)
OR
(a)

3 (a)
OR
(a)

4 (a)
OR
(a)

Part-B

II. One numerical problem must be given for each unit. Any three to be answered. $3\times 4 = 12$

5

6

7

8

Part-C

III One question must be given from each unit. Any four to be answered. $2\times 4 = 08$

9 (a)
(b)
(c)
(d)
(e)
(f)

OPEN ELECTIVE THEORY QUESTION PAPER PATTERN FOR I AND II SEMESTER

Max Marks: 60 Exam duration: $2\frac{1}{2}$ hours

Part-A

I. One question must be given from each unit. Any three to be answered out of four questions $3 \times 15 = 45$

1

2

3

4

Part-B

II Numerical problems or short essay-type questions must be given from each unit. Answer any three out of four questions. $3\times 5 = 15$

5

6

7

8

Board of Studies

Sl.No.	Name and address	Designation	Signature
1	Sri.Manjunatha R HoD, Dept of Physics SBRR Mahajana First Grade College Mysore. Mob. 9611075347 manjukalp@yahoo.com	Chairman	Manjunatha. R 19/11/21
2	Dr.M.A.Sridhar Professor, DOS in Physics Manasagangothri, Mysuru 0821-2419333 mas@physics.uni-mysore.ac.in	Member	
3	Smt. Rajeshwari S Associate Professor MES Degree College, 15th cross, Malleshwaram Bengaluru-03 9900945312, srfeb2166@gmail.com	Member	S. Rajeshwari
4	Smt. Rupa Shree M P Assistant Professor DRM Science college, Davangere rupa2friends@gmail.com Mob: 9449773064	Member	Rupashree. M.P
5	Dr.A.Chandrashekara Officer-in charge of help Physics unit UCIL,MC Palle, Kadapa dist. Andrapradesh. chandrabasav@yahoo.co.in Mob:9481149674	Member	Absent
6	Smt. Poornima S Assistant Professor SBRR Mahajana First Grade College Mysore, Mob: 9844815838 psmks2@gmail.com	Member	Poornima. S
7	Ms.Gayathri V Assistant Professor SBRR Mahajana First Grade College Mysore, Mob: 9980859170 gayatrivasu94@gmail.com	Member	Gayathri. V
8	Smt. M. Sushma Assistant Professor Department of Physics Yuvaraja's College, Mysore Mob:9986163654 sushmamraju77@gmail.com	Member	M. Sushma

Manjunatha. R

SBRR Mahajana First Grade College (Autonomous), Jayalakshmipuram, Mysuru

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Jayalakshmipuram, Mysuru-570 012

DEPARTMENT OF PHYSICS

Motto

Physics for Progress

Vision

Science and Technology for Better Future

Mission

Imparting Physics education with a professional approach to make citizens that are scientifically tempered to invent and discover

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis – Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions – Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research – Ability to formulate a hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5: Use of Modern Techniques/Tools – Use digital resources, various software/ platforms and appropriate techniques to interpret concepts of science.

PO 6: Impact of Science on Society – To prepare competent human resources and to develop scientific attitudes at local and global levels for social benefit.

PO 7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO 8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain integrality in a professional scenario while being aware of cultural diversities.

PO 9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning – Engage in the art of self-directed learning.

List of BoS Members

Sl No	Category	Name & Designation	Address for Communication	Email & Mobile No.
1	Chairman	Sri. Manjunatha R Associate Professor & HoD	Department of Physics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	manjukalp@yahoo.com 9611075347
2	Members	Dr. Poornima S Assistant Professor	Department of Physics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	psmks2@gmail.com 9844815838
3		Gayathri V Assistant Professor	Department of Physics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	gayatrivasu94@gmail.com 9980859170
4	Two Experts from Other University	Smt. Thejavathi N R Assistant Professor	Department of Physics Govt. College (Autonomous) Mandya.	thejavathi@gmail.com 9481037230
5		Dr. Chethan Prathap K.N Assistant Professor	Department of Physics University College of Science Tumkur University, Tumkur.	cpforphysics@gmail.com 9686245523
6	Nominee by the Vice Chancellor	Dr. Chandrashekar. M.S Professor	DOS in Physics, Manasagangothri, Mysuru.	msc@physics.uni-mysore.ac.in mschandrashekara@gmail.com 9448600121
7	Alumnus	Smt. M. Sushma Assistant Professor	Department of Physics Yuvaraja's College, Mysuru.	sushmamraju77@gmail.com 9986163654

Course Structure (NEP 2020)

Discipline Specific Courses (DSC) and Open Elective (OE)

II Year

Course type, code and Title		Hours/week		Credits	Maximum Marks			Exam Duration	Total Marks
		L	T/P	L: T: P	C1	C2	C3		
Physics- III Sem									
DSC(3) 222329	Wave motion and Optics	4	0	4:0:2 6 credits	20	20	60	$2\frac{1}{2}$ hours	150
	DSC(3)- Lab	0	4		10	15	25	3 hours	
OE(3)	**Optical Instrument** 22OEPHY301	3	0	3:0:0 3credits	20	20	60	$2\frac{1}{2}$ hours	100
	Sports Science 22OEPHY302								
Note: OE Any one to be selected									
Physics- IV Sem									
DSC(4) 222429	Thermal Physics and Electronics	4	0	4:0:2 6 credits	20	20	60	$2\frac{1}{2}$ hours	150
	DSC(4)- Lab	0	4		10	15	25	3 hours	
OE(4)	**Nanotechnology** 22OEPHY401	3	0	3:0:0 3credits	20	20	60	$2\frac{1}{2}$hours	100
	Electrical Instrument 22OEPHY402								

Note: OE Any one to be selected

DSC(3) Syllabus for B.Sc. Physics (Basic and Honors)

Semester III

Course Code: 222329	**Course Title:** DSC(3)-Wave motion and Optics (Theory) DSC(3)-lab
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester-End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs)	
CO1	Identify different types of waves, wave equations and different parameters for the wave and superposition of waves for different amplitude and frequency.
CO2	Analyze the formation of standing waves and how the energy is transferred along the standing wave in different methods, applications and mathematical models in the case of stretched string and vibration of a rod and identify the different parameters that affect the acoustics in a building, measure it, and control it.
CO3	Gain knowledge on various theories of light and apply the phenomenon of interference.
CO4	Implement the knowledge gained on diffraction and Polarization.

Course Content

Content	Hrs
Unit – 1: Waves and Superposition of Harmonic Waves	
Waves: Plane and Spherical Waves. Longitudinal and Transverse Waves. Characteristics of wave motion, Plane Progressive (Travelling) Wave and its equation, Wave Equation – Differential form (derivation). Particle and Wave Velocities: Relation between them, Energy Transport – Expression for the intensity of progressive wave, Newton's Formula for Velocity of Sound. Laplace's Correction (Derivation). A brief account of Ripple and Gravity Waves. Numerical Problems.	06
Superposition of Harmonic Waves Linearity and Superposition Principle. Superposition of two collinear oscillations having (1) equal frequencies and (2) different frequencies (Beats) – Analytical treatment. Superposition of two perpendicular Harmonic Oscillations: Lissajous Figures with equal and unequal frequency- Analytical treatment, graphical method. Uses of Lissajous' figures. Numerical Problems.	06
Suggested Activities	02

Activity No. 1	We know that sound is produced because of vibration. Look into at least 10 musical instruments and identify the regions of vibrations that produce the sound and those parts which enhance the sound because of reverberation. 1. Identify one common element in all of these. 2. Identify equipment that creates beats and try to explain the underlying basic principles. Demonstrate examples of beats using two tuning forks. 3. Identify what will happen when you drop a stone in standing water, and when your drop two stones side by side. 4. Make your observations sketch them and comment on them in a report.
Activity No. 2	Draw two sine waves (Amplitude vs time) one shifted with the other in phase. Identity where the resonation occurs for each phase shift. Plot phase vs time taken for resonance.
Activity No. 3	Take smooth sand, and place a pointed-edged pen vertically on the sand. To the mid of the pen, connect two perpendicular threads. Pull these perpendicular threads by varying the forces and timings. Note down the different shapes produced on the sand. Try to interpret the shapes. Make a report of it.
Activity No. 4	Hang a pot with sand, which has a hole in the bottom. Gently pull the pot to one side and observe the pattern formed by the sand on the floor. Report the observations.
Activity No. 5	Design a coupled pendulum. Study the impact of the motion of one pendulum over the other pendulum by varying the length, direction of the motion of one pendulum, and mass of the pendulum, and observe the resultant changes. Trace the path of the bobs and make a report.

Activity No. 6	**Note for the teachers for the activity:** Make 3 groups among students and assign each group the activity of drawing one of the 3 graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Take a stretched spring. Stretch it across two edges. Put a weight on the string, pluck it and measure the amplitude of the vibration. All groups will measure the total damping time of the oscillating spring. (Using mobile or scale) And plot a graph of the- 1. Varying load on the spring and amplitude at the center. 2. Take another weight and put that in another place and measure the amplitude of vibration at the center. 3. Vary the load in the center of the spring and measure the amplitude at the center.	
Unit – 2: Standing Waves and Acoustics		
Standing Waves: Velocity of transverse waves along a stretched string (derivation), Standing (Stationary)Waves in a String - Fixed and Free Ends (qualitative). Theory of Normal modes of vibration in a stretched string, Energy density and energy transport of a transverse wave along a stretched string. Vibrations in rods – longitudinal and transverse modes (qualitative). The velocity of Longitudinal Waves in gases (derivation). Normal Modes of vibrations in Open and Closed Pipes – Analytical treatment. Concept of Resonance, Theory of Helmholtz resonator. Numerical Problems.		08
Acoustics: Intensity and loudness of sound, Intensity level, Absorption coefficient, Reverberation and Reverberation time, Sabine's Reverberation formula (derivation), Factors affecting acoustics in buildings, Requisites for good acoustics. Acoustic measurements – intensity and pressure levels. Numerical Problems.		04
Suggested Activities		02
Activity No. 7	List different phenomena where standing waves are found in nature. Identify the phenomena and reason for standing waves. Also, identify the standing waves in musical instruments. Make a report.	
Activity No. 8	1**.** Go to 5 different newly constructed houses when they are not occupied and when they are occupied. Make your observations on the sound profile in each room. Give the reasons. Make a report**.** 2. Visit three very good auditoriums, and list out different ways in which the acoustic arrangements have been done (as decoration and Civil works). Look for the reasons in Google and identify which is acoustically the best auditorium among the three you visited. Make a report.	

Activity No. 9	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Take a bowl of different liquids (water, milk, kerosene, salt water, and Potassium Permanganate (KMNO4) solution. Place a small non-oily floating material (ex: thin plastic) on the surface of the liquid. Drop a marble on the liquid at the center of the bowl. Repeat the experiment by dropping the marble from different heights. Plot a graph of- 1. Height v/s time of oscillation 2. Weight of the marble v/s time of oscillation.
Activity No. 10	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Take two marble of the same weight. Drop both marbles on the surface of the liquid from some height. With the help of the mobile take the picture and measure the position of an interface of two wavefronts formed in the liquid. Plot graphs for different activities by doing the following activities. 1. By dropping two marbles of the same weight from different heights. 2. By dropping two marbles of different weights from the same height.
Unit – 3: Nature of light and Interference	
Nature of light: The types of fringes using Michelson interferometer. The corpuscular model of light - The wave model - Maxwell's electromagnetic waves- Wave-Particle Duality. Numerical Problems.	02

<table>
<tr><td colspan="2">Interference of light by divisionof wavefront: Huygen's theory-Concept of wave-front-Interference pattern produced on the surface of water-Coherence-Interference of light waves by division of wave-front- Young's doubleslit experiment- derivation of expression for fringe width-Fresnel Biprism, Loyd's Mirror (description only) - Interference with white light- Numerical Problems.</td><td>05</td></tr>
<tr><td colspan="2">Interferenceof light by divisionof amplitude: Interference by division of amplitude-Interference by a plane parallel film illuminated bya plane wave-Interference by a film with two non-parallel reflecting surfaces- the colour of thin films—Newton's rings-(Reflected light)- Michelson Interferometer- Determination of the wavelength of light. Numerical Problems.</td><td>05</td></tr>
<tr><td></td><td>Suggested Activities</td><td>02</td></tr>
<tr><td>Activity No. 11</td><td colspan="2">In the table given below explore which phenomenon can be explained by what and Make a report.
<table>
<tr><th>Sl.No</th><th>Phenomenon</th><th>Particle of Light</th><th>Wave Nature</th><th>Dual Nature</th></tr>
<tr><td></td><td>Pinhole camera</td><td></td><td></td><td></td></tr>
<tr><td>1.</td><td>Formation of images on lenses</td><td></td><td></td><td></td></tr>
<tr><td>2.</td><td>Formation of images on mirror</td><td></td><td></td><td></td></tr>
<tr><td>3.</td><td>Interference</td><td></td><td></td><td></td></tr>
<tr><td>4.</td><td>Polarization</td><td></td><td></td><td></td></tr>
<tr><td>5.</td><td>Diffraction due to single slit</td><td></td><td></td><td></td></tr>
<tr><td>6.</td><td>Black body radiation</td><td></td><td></td><td></td></tr>
<tr><td>7.</td><td>Photoelectric effect</td><td></td><td></td><td></td></tr>
<tr><td>8.</td><td>De-Broglie hypothesis</td><td></td><td></td><td></td></tr>
<tr><td>9.</td><td>Davisson & Germer Experiment</td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Activity No. 12</td><td colspan="2">Why color strips are seen in paddles on roads in rainy seasons try to simulate the same. Give the reasons. Make a report.</td></tr>
<tr><td>Activity No. 13</td><td colspan="2">Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks.</td></tr>
</table>

	1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Take a bowl of different liquids (water, milk, kerosene, salt water, and Potassium Permanganate (KMNO4) solution. Place a small non-oily floating material (ex: thin plastic) on the surface of the liquid. Drop two marbles of the same weight (mass) from the same height onto the surface of the water but at different time intervals. Plot graph for the different observations. **For teachers:** Demonstrate the formation of a Lissajous Figure using a CRO. Give different shapes of Lissajous Figure with varying frequency and amplitude. Ask the students to comment on the observations.

Unit –4: Diffraction and Polarisation	
Fraunhofer diffraction: Introduction- Fraunhofer diffractions- Single slit diffraction pattern-position of Maxima and Minima (Qualitative arguments)- Two slit diffraction pattern-position of Maxima and minima- Theory of plane diffraction grating-Grating spectrum- normal and oblique incidence- Resolving power and dispersive power of a grating Single slit; Double Slit. Multiple slits & Diffraction grating. Numerical Problems.	04
Fresnel Diffraction: Fresnel Diffraction- Fresnel half-period zones- Diffraction by a circular aperture- diffraction by an opaque disc- The zone plate -comparison between zone plate andconvex lens. Numerical Problems.	04
Polarisation: Introduction-Production of polarized light- The wire Grid polarizer and Polaroid- Superposition of two disturbances-Phenomenon of double refraction-Quarter wave plates and half wave plates- Analysis of polarized light-optical activity. Numerical Problems.	04
Suggested Activities	02

Activity No. 14	• Explain the polarization of light through a chart. • List out the surfaces that reflect polarized light. • Learn how the polarization of light can be done by both transmission and reflection. • Perform an experiment and make a report. using CDs and DVDs as diffraction gratings. Ref:https://www.nnin.org/sites/default/files/files/Karen_Rama • Obtain the diffraction spectra using a CD and design an experiment to find the distance between the tracks on it (Ref:https://www.brighthubeducation.com/science-lessons-grades-9-12/39347- diffraction- experiment-measuring-groove-spacing-on-CDs/,https://silo.tips/download/diffraction-from-a-compact-disk) .

Activity No. 15	What is the physics behind making 3D movies? Group Discussion (https://www.slideserve.com/rae/physics-behind-3d-movies-powerpoint-ppt-presentation) Make a report.
Activity No. 16	List out different types of zone plates and look for their applications in day-to-day life. Make a report.
Activity No. 17	Collect information and study how optically polarizing lenses are made. Visit a nearby lens-making facility. Learn the principle behind sunglasses. Make a report.
Activity No. 18	**Note for the teachers for the activity:** Make 3 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Identify any 3 sharp edges of varying thickness and assign them to 3 groups. Shine a laser light pointing towards the edge of the needle. Observe the patterns formed on the wall or screen and measure the distance between the bands. Correlate the distance between the bands formed with the thickness of the edge and the distance from the edge to the screen. By this, calculate the wavelength of the laser light used.

Textbooks

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1.	The Physics of Waves and Oscillations,	N K Bajaj	Tata McGraw-Hill Publishing Company Ltd., Second Edition,	1984
2.	Waves and Oscillations	N Subramanyam and Brij Lal	Vikas Publishing House Pvt. Ltd., Second Revised Edition	2010
3.	A Text Book of Sound	D R Khanna and R S Bedi	Atma Ram & Sons, Third Edition	1952
4.	Oscillations and Waves	Satya Prakash	Pragathi Prakashan, Meerut, Second Edition	2003
5.	Optics	Ajoy Ghatak	McGraw Hill Education (India) Pvt Ltd	2017
6.	A text Book of Optics	Brij Lal, M N Avadhanulu & N Subrahmanyam	S. Chand Publishing	2012

References Books				
Sl No	**Title of the Book**	**Authors Name**	**Publisher**	**Year of Publication**
1.	Berkeley Physics Course – Waves,	Frank S Crawford Jr.	Tata Mc Graw-Hill Publishing Company Ltd., Special Indian Edition,.	2011
2.	Optics	Eugene *Hecht*	Pearson Paperback	2019
3.	Introduction To Optics	Pedrotti and Frank L ,	Pearson India	3rd Edition
4.	Fundamentals of Optics	Francis Jenkins Harvey White	McGraw Hill Education	2017

Weblinks

- https://www.britannica.com/science/wave-motion
- https://testbook.com/learn/physics-wave-motion/
- http://hyperphysics.phy-astr.gsu.edu/hbase/Sound/wavplt.html
- https://cnx.org › exports › waves-and-optics-33.7.pdf

DSC(3) lab

List of Experiments

Credit : L:T:P 0:0:2

(Minimum EIGHT experiments must be completed)

Sl No	Experiments
1	The velocity of sound through a wire using a Sonometer.
2	Determination of unknown concentration of sugar solution by a graphical method using a polarimeter
3	Study of Lissajous Figures
4	Helmholtz resonator using tuning fork.
5	To determine the refractive index of the Material of a prism using a sodium source.
6	To determine the Cauchy's constants of the material of a prism using a mercury source.
7	To determine the wavelength of sodium light using Fresnel Biprism.
8	To determine the radius of curvature of planoconvex using Newton's Rings
9	To determine the thickness of a thin paper by measuring the width of the interference fringes produced by a wedge-shaped Film.
10	To determine the wavelength of spectral lines of Hg source using a plane diffraction grating.

Reference Book for Laboratory Experiments

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Advanced Practical Physics for students	B.L. Flint and H.T. Worsnop	Asia Publishing House.	1971
2	A Text Book of Practical Physics	I. Prakash & Ramakrishna	Kitab Mahal, 11th Edition	2011
3	Advanced level PhysicsPracticals	Michael Nelson and Jon M. gborn	Heinemann Educational Publishers, 4th Edition	1985
4	A Laboratory Manual of Physics for undergraduateclasses	D.P.Khandelwal	Vani Publications.	1985

Course Articulation Matrix- course code-222329												
Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	1	1	1	2	2	2	1	1	1	___	2
CO2	3	2	1	1	2	2	2	1	1	1	___	2
CO3	3	2	1	1	2	2	2	1	2	2	___	2
CO4	3	3	1	1	2	2	2	1	2	2	1	2
Weighted average	**3**	**2**	**1**	**1**	**2**	**2**	**2**	**1**	**1.5**	**1.5**	**1**	**2**

OE Physics Syllabus for All Programs (Except Science)

Semester III

Course Code: 22OEPHY301	**Course Title:** OE(5): Optical Instruments
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester-End Examination Marks:** 60

Course Outcomes (COs)	
CO1	Comprehending the basic knowledge of different laws and principles of optics and assimilating the different formulae of optics.
CO2	Gaining knowledge about the construction and working of various microscopes and cameras and their utilization.
CO3	Acquiring the knowledge of construction, working and application of different types of telescopes and spectroscopes.

Course Content

Content	Hrs
Unit – 1	
Basics of Optics: Scope of optics, optical path, laws of reflection and refraction as per Fermat's principle, magnifying glass, Lenses (thick and thin), convex and concave lenses, Lens makers formulae for double concave and convex lenses, lens equation. Focal and nodal points, focal length, image formation, a combination of lenses, Dispersion of light: Newton's experiment, angular dispersion and dispersion power. Dispersion without deviation. (Expressions need not be derived, but have to be discussed qualitatively).	13
Unit – 2	
Camera and microscopes: Human eye (constitution and working), Photographic camera (principle, construction and working), construction, working and utilities of Simple microscopes, Compound microscope, Electron microscopes, Binocular microscopes.	13
Unit – 3	
Telescopes and Spectrometer: Construction, working and utilities of Astronomical telescopes, Terrestrial telescopes, Reflecting telescopes, Construction, working and utilities of Eyepieces or Oculars (Huygen, Ramsden's, Gauss) Spectrometer - Construction, working and utilities, measurement of refractive index.	13
Activities: ➢ Find the position and size of the image in a magnifying glass and magnification. ➢ Observe rainbows and understand optics. ➢ Create a rainbow. ➢ Find out what makes a camera to be of good quality. ➢ Observe the dispersion of light through a prism. ➢ Make a simple telescope using magnifying glass and lenses. ➢ Learn the principle of refraction using prisms. ➢ Check the bending of light in different substances and find out what matters here. ➢ Learn about different telescopes used to see galaxies and their ranges. ➢ Many more activities can be tried to learn optics by going through you tubes and websites such as https://spark.iop.org, http://www.yenka.com, https://publiclab.org etc.	03

Text books

- Fundamentals and Basic Optical Instruments, 1st Edition, Volume 1 Edited By Daniel Malacara Hernández and Brain J Thompson
- Basic Optics and Optical Instruments, Revised Edtion By Fred A. Carson.

Reference books

- Fundamentals and basic optical instruments; Advanced optical instruments and techniques by Malacara & Daniel & Thompson & Brian J
- Introduction to Optics by Anchal Srivastava, R K Shukla, T Pandys.

Weblinks

- https://en.wikipedia.org/wiki/Optical_instrument
- https://byjus.com/physics/optical-instruments/
- https://www.vedantu.com/physics/different-optical-instruments

Course Articulation Matrix- 22OEPHY301

Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	1	1	1	2	2	2	1	1	1	___	1
CO2	3	1	1	1	2	2	2	1	2	1	___	1
CO3	3	1	1	1	2	2	2	1	2	1	1	1
Weighted average	**3**	**1**	**1**	**1**	**2**	**2**	**2**	**1**	**1.66**	**1**	**1**	**1**

OE Physics Syllabus for All Programs (Except Science)

Semester III

Course Code: 22OEPHY302	**Course Title:** OE(6): Sports Science
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester-End Examination Marks:** 60

Course Outcomes (COs)	
CO1	Comprehension of measurements, Newton's laws of motion and assimilating the knowledge of projectile motion.
CO2	Gaining knowledge about the law of conservation, a center of mass and gravitational law, and Archimedes's principles.
CO3	Enlightening the significance of nutrients in food for physical exercise and briefing about the energy sources that are required in day-to-day life.

Course Content

Content		Hrs
Unit – 1		
Measurement: Physical quantities. Standards and Units. An international system of Units. Standards of time, length and mass. Precision and significant figures. **Newton's laws of motion**: Newton's first law. Force, mass. Newton's second law. Newton's third law. Mass and weight. Applications of Newton's laws. **Projectile motion**: Shooting a falling target. Physics behind Shooting, Javelin throw and Discus throw.		13
Unit – 2		
Conservation laws: Conservation of linear momentum, collisions – elastic and inelastic. Angular momentum. (Physics behind Carom, Billiards, Racing). **Centre of mass**: Physics behind Cycling, rock climbing, Skating. **Gravitation**: Origin, Newton's law of gravitation. Archimedes's principle, Buoyancy (Physics behind swimming)		13
Unit – 3		
Food and Nutrition: Proteins, Vitamins, Fat, Blood pressure. Problems due to the deficiency of vitamins. **Energy:** Different forms of Energy, Conservation of mass-energy. **Physical exercises:** Walking, Jogging and Running, Weight management.		13
Suggested Activities		03
Activity 1:	Identify the methods of measurement of time, length and mass from ancient times and build models for them. Reference: History of measurement - Wikipedia https://en.wikipedia.org › wiki> History_of_measurement.	
Activity 2:	Identify Physics principles behind various Sports activities. **https://www.real-world-physics-problems.com/physics-of-sports.html.**	
Activity 3:	List the difficulties experienced in Gymnastics, Cycling and weightlifting	
Activity 4:	List the difficulties experienced in swimming.	
Activity 5:	Learn breathing exercises. Reference: 1)Simple Breathing Exercise for Beginners | Swami Ramdev 2) https://www.yogajournal.com.	
Activity 6:	Write an essay on Physical health v/s Mental health or conduct a debate on Physical health v/s Mental health.	

Textbooks				
Sl No	**Title of the Book**	**Authors Name**	**Publisher**	**Year of Publication**
1.	Physics for Entertainment	Yakov Perelman	Createspace Independent Pub.	2012
2.	Physics Everywhere	Yakov Perelman	Prodinnova	2014
3.	Mechanics for Entertainment	Yakov Perelman	Prodinnova	2014
4.	Handbook of Food and Nutrition	M.Swaminathan	Bangalore Press 2012	2012
5.	Food Science	B. Srilakshmi	New Age International Pub	2015

References Books				
Sl No	**Title of the Book**	**Authors Name**	**Publisher**	**Year of Publication**
1.	Physics	Resnick, Halliday and Krane, Vol 1	Wiley Student Edition.	2011
2.	For the love of Physics	Walter Lewin	Taxmann Publications Private Limited	2012
3.	An Introduction to the Physics of Sports	VassiliosMcInnesSpathopoulos	CreateSpace Independent Publishing Platform	2013

Weblinks

- https://www.topendsports.com/biomechanics/physics.htm
- https://www.real-world-physics-problems.com/physics-of-sports.html
- https://www.healthline.com/
- https://www.mayoclinic.org/
- https://www.who.int/news-room/

Course Articulation Matrix- 22OEPHY302												
Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	2	1	1	2	3	2	1	1	1	___	2
CO2	3	2	1	1	2	3	2	1	2	1	___	2
CO3	3	1	1	1	2	3	2	1	2	1	1	2
Weighted average	**3**	**1.66**	**1**	**1**	**2**	**3**	**2**	**1**	**1.66**	**1**	**1**	**2**

DSC(4) Syllabus for B.Sc. Physics (Basic and Honors)

Semester IV

Course Code: 222429	**Course Title:** DSC(4)-Thermal Physics and Electronics (Theory) DSC(4)-lab
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester-End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs)	
CO1	Apply the laws of thermodynamics, laws of kinetic theory and radiation laws to the ideal and practical thermodynamics systems through derived thermodynamic relations.
CO2	Use the concepts of semiconductors to comprehend different Semiconductor devices such as diode transistors, BJT, FET, etc and explain their functioning.
CO3	Acquire knowledge on the functioning of OP-AMPS and apply it as the building blocks in logic gates.
CO4	Implement the use of logic gates in different theorems of Boolean Algebra followed by logic circuits.

Course Content

Content	Hrs
Unit – 1	
Laws of Thermodynamics: Review of the concepts of Heat and Temperature.	01
First Law of Thermodynamics: Differential form, Internal Energy. Equation of state for an adiabatic process, Work Done during Isothermal and Adiabatic Processes. Numerical Problems.	04
Second Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Reversible and Irreversible processes with examples. Heat Engines: Carnot engine & efficiency (no derivation). Refrigeration & coefficient of performance, Applications of Carnot engine in locomotion, Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale. Concept of Entropy, Second Law of Thermodynamics in terms of Entropy. Numerical Problems.	05
Third Law of Thermodynamics: Statement, Significance and Unattainability of Absolute Zero. Numerical Problems.	02
Suggested Activities	02
Activity No. 1	• Feel cold because coldness enters my body. Discuss the statement in day-to-day life. Approximately give examples of **(i)** open system **(ii)** closed system and **(iii)** isolated system • Discuss when the temperature of the body is locked until what time you hold the thermometer in contact with the body. Discuss it in contact with the laws of thermodynamics. • Discuss why when a person works or does exercise, he sweats. Reason it with the laws of thermodynamics.
Activity No. 2	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks. **(i)** The first slide will explain the process of doing the experiment. **(ii)** In the second slide. Students will show the graph of measurement. **(iii)** In the third slide, they will list three observations from that study.

	Activity: Take four different sizes of the same metal, preferably of the same shape and give one piece to each group. Heat it uniformly on a hot plate. Keep a beaker of water with a thermometer immersed in it. Drop one hot metal into the water and record the temperature with time. Repeat the experiment for the other heated metal pieces of different sizes. **(i)** Plot a graph for the volume of the metal piece used v/s respective temperature change observed. **(ii)** Determine the heat capacity and specific heat of the metal used.
Activity No. 3	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks. **(i)** The first slide will explain the process of doing the experiment. **(ii)** In the second slide. Students will show the graph of measurement. **(iii)** In the third slide, they will list three observations from that study. **Activity:** Take ice cubes of different sizes and immerse them in water and measure the temperature change with time and repeat the experiment. Graph the observations.

Unit – 2	
Thermodynamics Potentials: Internal Energy, Enthalpy, Helmholtz Free Energy, Gibb's Free Energy. Their Definitions, Properties and Applications. Numerical Problems.	02
Maxwell's thermodynamic Relations Derivations and applications of Maxwell's Relations (1) First order Phase Transitions with examples, Clausius-Clapeyron Equation (2) Values of Cp-Cv (3) Joule-Thomson Effect and J- T coefficient (Derivation) for Vander Walls gas. Attainment of low temperature by liquefaction of gases and adiabatic demagnetization. Numerical Problems.	03
Kinetic Theory Of Gases: Distribution of Velocities: Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas: Mean, RMS and Most Probable Speeds. Degrees of Freedom, Law of Equipartition of Energy (no derivation). Specific heats of Gases. Numerical Problems.	04
Radiation: Blackbody radiation, spectral distribution, Lummer-Pringsheim experiment-Result, the concept of energy density and pressure of radiation (no derivation). Derivation of Planck's law, Wein's law, Rayleigh-Jean law, deduction of Stefan-Boltzmann law and Wien's displacement law from Planck's law. Numerical Problems.	03

Suggested Activities	02
Activity No. 4	**(i)** Measuring the Solar Constant Materials: Simple flat-sided Jar and Thermometer. **Activity:** A bottle containing water is exposed to solar radiation. The rise in temperature and time took are noted. Calculate the heat absorbed by water and relate it to the output of the Sun. **(ii)** Thermo emf Materials: Suitable for two dissimilar metal wires, and voltage measuring devices. **Activity:** In this experiment, students will assemble the thermocouple and study the three effects namely, Seebeck, Peltier, and Thompson. **(iii)** Inverse square law of radiation Materials: A cardboard with a grid, cardboard with a hole, supporting clips, a ruler, candle. **Activity:** Students set the device. They count the lighted squares on the cardboard with the grid by varying the distance. And make necessary measurements and calculations to arrive at the inverse square law of radiation. Ref: Activity-Based Physics Thinking Problems in Thermodynamics: Kinetic Theory http://www.physics.umd.edu/perg/abp/think/thermo/kt.htm
Activity No. 5	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks. **(i)** The first slide will explain the process of doing the experiment. **(ii)** In the second slide. Students will show the graph of measurement. **(iii)** In the third slide, they will list three observations from that study. **Activity:** Take two dissimilar metal wires. Spot weld them forming two junctions. Dip one junction in ice and heat the other junction with a burner. Plot a graph of the time of heating v/s Thermo EFM generated in the voltmeter.
Activity No. 6	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks.

	(i) The first slide will explain the process of doing the experiment. **(ii)** In the second slide. Students will show the graph of measurement. **(iii)** In the third slide, they will list three observations from that study. **Activity:** Make 4 groups and give different-sized balloons to each group. Fit different-sized nozzles into the mouth of the large balloons. Measure the temperature or the EMF generated using a thermocouple placed at the mouth of the nozzle as the pressurized gas is released. Plot a graph of time v/s temperature. Vary the volume of the balloon and repeat the experiment. Plot the graph of volume v/s temperature difference created.	
Unit – 3		
Semiconductor devices: Review of Intrinsic and Extrinsic semiconductors, p-n junction and its Characteristics and Parameters, Diode approximations, Half-wave rectifier, Full-wave rectifier, Zener diode voltage regulators: Regulator circuit with no load, Loaded Regulator. Numerical problems.		06
Junction Transistors: Basics of Bipolar Junction Transistors (BJT), BJT operation, Common Base, Common Emitter and Common Collector Characteristics. Field Effect Transistor (FET) and its characteristics. Transistor as an Amplifier and Oscillator. Numerical problems.		06
Suggested Activities		02
Activity No. 7	Wire a regulated DC power supply on a breadboard or groove board to give a regulated output voltage of + 5 V; +15 V; Dual power output: ± 5 V; Dual power output: ± 15 V. Use: 3-pin voltage regulators. Components required: 1. Step down transformer- 1 No. (5 V tapping, 100 – 500 mA current rating), BY 127 semiconductor diodes – 4 Nos, Inductor - 1, Capacitor - 1, 3 pins 5V regulator-1 Search for circuit diagrams in books/net. **Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks. **(i)** The first slide will explain the process of doing the experiment. **(ii)** In the second slide. Students will show the graph of measurement. **(iii)** In the third slide, they will list three observations from that study. **Activity:** Form 3 groups and tell them to make a DC supply of low current of different voltages like 5V, 10V, and 15V on a breadboard.	
Activity No. 8	**(i)** Learn to identify the terminals of different types (packages) of BJTs. **(ii)** In the case of power transistors, learn how to fix a heat sink for the transistor. **(iii)** Learn the difference between BJT and FET in their operational characteristics.	

Activity No. 9	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On a specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, a teacher shall assign marks to each group, wherein all members of the group will get equal marks. **(i)** The first slide will explain the process of doing the experiment. **(ii)** In the second slide. Students will show the graph of measurement. **(iii)** In the third slide, they will list three observations from that study. **Activity:** Take any 3 diodes and assign one to each group. Measure its resistance when dipped in ice and heat the ice till it boils. Using this data, plot the calibration curve of temperature v/s resistance and also the cooling curve of temperature V/s time for the diode by each group.	
Unit – 4		
Electronics: Integrated Circuits (Analog and Digital), Operational Amplifiers, Ideal characteristics of Op-Amp, Inverting and Non-Inverting Configurations. Applications- Voltage Follower, Addition and Subtraction. Numerical problems.		04
Digital: Switching and Logic Levels, Digital Waveform. Number Systems: Decimal Number System, Binary Number System, Converting Decimal to Binary, Hexadecimal Number System: Converting Binary to Hexadecimal, Hexadecimal to Binary.		04
Boolean Algebra Theorems: De Morgan's theorem. Digital Circuits: Logic gates, NOT Gate, AND Gate, OR Gate, NAND Gate, NOR Gate, Algebraic Simplification, Implementation of NAND and NOR functions.		04
Suggested Activities		02
Activity No. 10	Learn how to implement logic functions (AND, OR, NOT) using just diodes and resistors. A circuit diagram shows how different types of gates can be built by X-NOR gates.	
Activity No. 11	**Operational Amplifiers** **(i)** Understand the concept of virtual ground of an OP-AMP. **(ii)** Learn the different types of op-amps used for different applications. **(iii)** What is a buffer? Prepare a report on buffers and their application in instrumentation electronics.	
Activity No. 12	**(i)** A man has to take a wolf, a goat, and some cabbage across a river. His rowboat has enough room for the man plus either the wolf or the goat or the cabbage. If he takes the cabbage with him, the wolf will eat the goat. If he takes the wolf, the goat will eat the cabbage. Only when the man is present	

	are the goat and the cabbage safe from their enemies. All the same, the man carries a wolf, goat, and cabbage across the river. How? Write the truth table for the above story and implement using gates. **(ii)** A locker has been rented in the bank. Express the process of opening the locker in terms of digital operation. **(iii)** A bulb in a staircase has two switches, one switch being at the ground floor and the other one at the first floor. The bulb can be turned ON and also can be turned OFF by and one of the switches irrespective of the state of the other switch. The logic of switching of the bulb resembles.

Textbooks

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Electronic Devices and Circuits	David A. Bell	PHI, New Delhi	2004
2	Integrated Electronics	Jacob Millman and CC Halkias		
3.	Digital Fundamentals	Floyd	PHI, New Delhi	2001

References Books

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Heat and Thermodynamics	M.W. Zemansky, Richard Dittman	McGraw-Hill.	1981
2	Thermal Physics	S. Garg, R. Bansal and Ghosh	Tata McGraw-Hill	2nd Edition, 1993
3	A Treatise on Heat	Meghnad Saha, and B.N.Srivastava,	Indian Press	1958
4	Modern Thermodynamics with Statistical Mechanics	Carl S. Helrich,	Springer.	2009
5	Thermodynamics, Kinetic Theory & Statistical Thermodynamics.	Sears & Salinger	Narosa.	1988
6	An Introduction to Thermal Physics	Daniel V Schroeder	Oxford University Press	2020

Weblinks

- https://deepblue.lib.umich.edu/bitstream/handle/2027.42/75853/ayd_1.pdf/
- https://sites.ualberta.ca/gingrich/courses/phys395/notes/phys395/
- https://www.researchgate.net

DSC(4) lab

List of Experiments

Credit : L:T:P 0:0:2

(Minimum EIGHT experiments must be completed)

1	Verification of Gaussian distribution law and calculation of standard deviation – Monte Carlo experiment.
2	Determination of Unknown Temperature using Platinum resistance thermometer.
3	Verification of Stefan's Boltzmann fourth power law using Meter bridge.
4	V-I Characteristics of Silicon & Germanium PN Junction diodes (FB & RB).
5	V-I Characteristics of Zener Diode and voltage regulator.
6	Characteristics of BJT in Common Emitter Configuration.
7	Frequency response of CE Amplifier.
8	Half Wave and Full Wave Rectifier with and Without Filter.
9	Truth table verification of logic gates using TTL 74 series ICs.
10	Verification of basic logic gates using transistors.
11	Non-inverting and Inverting op-amp circuits.
12	Voltage follower, Adder and Subtractor circuits using OPAMP.

Sl No	Title of the Book	Publisher	Year of Publication
1	Basic Electronics Lab (P242) Manual 2015-16	National Institute of Science Education and Research Bhubaneswar	2015

Suggested Readings:

1. B.L. Worsnop, H.T. Flint, "Advanced Practical Physics for Students", Methuen & Co.,Ltd., London, 1962, 9e.
2. S. Panigrahi, B. Mallick, "Engineering Practical Physics", Cengage Learning India Pvt.Ltd., 2015, 1e.

Course Articulation Matrix-Course code-222429												
Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	1	1	1	2	2	2	1	1	1	___	2
CO2	3	2	1	1	2	2	2	1	1	1	___	2
CO3	3	2	1	1	2	2	2	1	2	2	___	2
CO4	3	3	1	1	2	2	2	1	2	2	1	2
Weighted average	**3**	**2**	**1**	**1**	**2**	**2**	**2**	**1**	**1.5**	**1.5**	**1**	**2**

OE Physics Syllabus for All Programs (Except Science)

Semester IV

Course Code: 22OEPHY401	**Course Title:** OE(7): Nanotechnology
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester-End Examination Marks:** 60

Course Outcomes (COs)	
CO1	Acquiring the knowledge of Nanomaterials, Application of the Schrödinger equation and confinement of nanostructure and its consequences in 1D,2D and 3D.
CO2	Gaining knowledge on various methods used in the processing, synthesizing and characterization of nanostructure materials
CO3	Comprehending the properties and application of nanomaterials by implementing various nanomaterial devices.

Course Content

Content	Hrs
Unit – 1	
Introduction to nanomaterials Length scales in physics, Nanostructures: 1D, 2D and 3Dnanostructures (nanodots, thin films, nanowires, nanorods), Band structure and density of states of materials at the nanoscale, Size Effects in nanosystems, Quantum confinement: Applications of Schrodinger equationInfinite potential well, potential step, potential box, quantum confinement of carriers in 3D,2D, 1D nanostructures and its consequences.	13
Unit – 2	
Synthesis and Characterization of nanostructure materials Top-down and Bottom-up approach, Photolithography. Ball milling. Gas phase condensation.Vacuum deposition. Physical vapor deposition (PVD): Thermal evaporation, E-beam evaporation, Pulsed Laser deposition. Chemical vapor deposition (CVD). Sol-Gel. Electrodeposition. Spray pyrolysis. Hydrothermal synthesis. Preparation through colloidal methods.MBE growth of quantum dots. X-Ray Diffraction. Optical Microscopy. Scanning electron microscopy. Transmission Electron Microscopy. Atomic Force Microscopy. ScanningTunneling Microscopy.	13
Unit – 3	
Properties and applications of nanomaterials Coulomb interaction in nanostructures. Concept of dielectric constant for nanostructures and charging of nanostructure. Quasi-particles and excitons. Excitons in direct and indirect bandgap semiconductor nanocrystals. Quantitative treatment of quasiparticles and excitons, charging effects. Radiative processes: General formalization-absorption, emission and luminescence. Optical properties of heterostructures and nanostructures. Applications of nanoparticles, quantum dots, nanowires and thin films for photonic devices (LED, solar cells). Nanomaterial Devices: Quantum dots heterostructure lasers, optical switching and optical data storage. Magnetic quantum well; magnetic dots - magnetic data storage.	13
Suggested Activities	03
1. Synthesis of metal nanoparticles by chemical route. 2. Synthesis of semiconductor nanoparticles. 3. XRD pattern of nanomaterials and estimation of particle size. 4. To study the effect of size on the color of nanomaterials. 5. Growth of quantum dots by thermal evaporation. 6. Prepare a disc of ceramic of a compound using ball milling, pressing and sintering, and study its XRD. 7. Fabricate a thin film of nanoparticles by spin coating (or chemical route) and study transmittance spectra in the UV-Visible region. 8. Prepare a thin film capacitor and measure capacitance as a function of temperature or frequency. 9. Visit nearby research labs to study the working of XRD, SEM, and UV-Visible Spectrophotometer instruments. 10. Visit nearby research labs for project work and interaction with scientists at IISC, JNCSR, Universities, etc.	

Text books

- C.P. Poole, Jr. Frank J. Owens, Introduction to Nanotechnology (Wiley India Pvt. Ltd.).
- S.K. Kulkarni, Nanotechnology: Principles & Practices (Capital Publishing Company)
- K.K. Chattopadhyay and A. N. Banerjee, Introduction to Nanoscience and Technology
  (PHI Learning Private Limited).
- Richard Booker, Earl Boysen, Nanotechnology (John Wiley and Sons).

Reference books

- M. Hosokawa, K. Nogi, M. Naita, T. Yokoyama, Nanoparticle Technology Handbook (Elsevier, 2007).
- Introduction to Nanoelectronics, V.V. Mitin, V.A. Kochelap and M.A. Stroscio, 2011, Cambridge University Press.
- Bharat Bhushan, Springer Handbook of Nanotechnology (Springer-Verlag, Berlin, 2004).

Weblinks

- https://www.twi-global.com/technical-knowledge/faqs/what-is-a-nanomaterial
- https://en.wikipedia.org/wiki/Nanomaterials
- https://www.mdpi.com/journal/nanomaterials

Course Articulation Matrix- 22OEPHY401												
Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	1	1	1	2	2	2	1	1	1	___	1
CO2	3	1	1	1	2	2	2	1	1	2	1	1
CO3	3	1	1	1	2	3	2	1	2	1	___	1
Weighted average	**3**	**1**	**1**	**1**	**2**	**2.33**	**2**	**1**	**1.33**	**1.33**	**1**	**1**

OE Physics Syllabus for All Programs (Except Science)

Semester IV

Course Code: 22OEPHY402	**Course Title:** OE(8) : Electrical Instruments
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours	**Formative Assessment Marks:** 40
Exam Duration: $2\frac{1}{2}$ Hours	**Semester-End Examination Marks:** 60

Course Outcomes (COs)	
CO1	Developing knowledge of Kirchoff's laws and experimental application of circuit elements.
CO2	Gaining knowledge about the different types of galvanometers, potentiometers and DC/AC bridges.
CO3	Acquiring knowledge on lead acid batteries, working of CRO and transducers.

Course Content

Content	Hrs
Unit – 1	
Voltage and current sources, Kirchoff's current and voltage laws, loop and nodal analysis of simple circuits with dc excitation. Ammeters,voltmeters: (DC/AC). Representation of sinusoidal waveforms, peak and RMS values, and power factor. Analysis of single-phase series and parallel R-L-C ac circuits. Three-phase balanced circuits, voltage and current relations in star and delta connections. Wattmeters: Induction type, single phase and three phase wattmeter, Energy meters: AC. Induction-type single-phase and three-phase energy meters. Instrument Transformers: Potential and current transformers, ratio and phase angle errors, phasor diagram, methods of minimizing errors; testing and applications.	13
Unit – 2	
Galvanometers: General principle and performance equations of D'Arsonval Galvanometers, Vibration Galvananometer and Ballistic Galvanometers. **Potentiometers:** DC Potentiometer, Crompton potentiometer, construction, standardization, application. AC Potentiometer, Drysdalepolar potentiometer; standardization, application. **DC/AC Bridges:** General equations for bridge balance, measurement of self-inductance by Maxwell's bridge (with variable inductance & variable capacitance), Hay's bridge, Owen's bridge, measurement of capacitance by Schering bridge, errors, Wagner's earthing device, Kelvin's double bridge.	13
Unit – 3	
Transducer: Strain Gauges, Thermistors, Thermocouples, Linear Variable Differential Transformer (LVDT), Capacitive Transducers, Piezo-Electric transducers, Optical Transducer, Hall Effect Transducer. **CRO:** Block diagram, Sweep generation, vertical amplifiers, use of CRO in the measurement of frequency, phase, Amplitude and rise time of a pulse. Digital Multi-meter: Block diagram, the principle of operation. Basics of lead-acid batteries, Lithium Ion Battery, Battery storage capacity, Coulomb efficiency, Numerical of high and low charging rates, Battery sizing.	13
Suggested Activities	03

Activity No. 1	Identify a variety of electrical switches and note down their applications/utility. Reference: Weblink/Youtube/Book
Activity No. 2	Identify the hazards involved in handling electrical circuits and instruments, and make a list of safety precautions as well as first aid for electrical shocks. Reference: Weblink/Youtube/Book
Activity No. 3	Make a study of the importance of grounding in electrical circuits Reference: Weblink/Youtube/Book
Activity No. 4	Prepare a detailed account of various methods of earthing and their utility/applications Reference: Weblink/Youtube/Book.
Activity No. 5	Prepare a document on the evolution of incandescent bulbs to the present-day LED lights Reference: Weblink/Youtube/Book.
Activity No. 6	Make a comparative study of Fuses, MCB, ELCB, and Relays highlighting their use and applications. Reference: Weblink/Youtube/Book.

Text Books

- AK. Sawhney, A Course in Elec. & Electronics Measurements & Instrumentation, Dhanpatrai & Co. 1978.
- A.D. Helfrick & W.D. Cooper, Modern Electronic Instrumentation and Measurement Techniques PHI,2016

Reference book:

- D C Kulshreshtha, Basic Electrical Engineering, Mc Graw Hill Publications,**2019**
- David G Alciatore and Michel B Histand, Introduction to Mechatronics and Measurement Systems, 3rd, Tata McGraw Hill Education Private Limited, New Delhi., 2005
- Vincent Del Toro, Electrical Engineering Fundamentals Prentice Hall India**2009**

Weblinks

- https://en.wikipedia.org/wiki/List_of_electrical_and_electronic_measuring_equipment
- https://www.electrical4u.com/electrical-measuring-instruments-types-accuracy-precision-resolution-speed/
- https://www.embibe.com/exams/electrical-instruments/

Course Articulation Matrix- 22OEPHY402

Course outcomes	Program outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	1	1	1	2	2	2	1	1	1	___	1
CO2	3	1	1	2	2	2	2	1	2	1	___	1
CO3	3	1	1	2	2	2	2	1	2	1	1	1
Weighted average	**3**	**1**	**1**	**1.66**	**2**	**2**	**2**	**1**	**1.66**	**1**	**1**	**1**

Continuous Formative Evaluation/ Internal Assessment

Total marks for each course shall be based on continuous assessments and semester-end examinations. The pattern of 40:60 for IA and Semester End theory examinations respectively and 50:50 for IA and Semester End practical examinations respectively.

	Theory	Practical
Total Marks for each Course	100 marks	50 marks
Continuous assessment-1 (C1)	20 marks	10 marks
Continuous assessment-2 (C2)	20 marks	15 marks
Semester End Examination (C3)	60 marks	25 marks

The evaluation process of IA marks shall be as follows:

a) The first component (C1) of the assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, fieldwork, project work, etc. This assessment and score process should be completed after completing 50% of the syllabus of the course/s and within 45 working days of the semester program

b) The second component (C2) of the assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum/project work, etc. This assessment and score process should be based on the completion of the remaining 50 percent of the syllabus of the courses of the semester.

c) During the 17th – 19th week of the semester, a semester-end examination shall be conducted by the University for each Course. This forms the third and final component of the assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on the scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct a special test for such candidate on the date fixed by the concerned teacher but before the commencement of the concerned semester-end examinations.

e) For assignments, tests, case study analysis, etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets, etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests/assignment/work, etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under.

	C1 marks	C2 marks	Total Marks
Session Test	20	---	20
Seminars/Presentations/Activity/ Case study /Assignment / Fieldwork / Project work etc.	---	20	20
Total	20	20	40

- For the practical course of full credits, the Seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance. (the ratio is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test , Seminar, Case study / Assignment, etc. can be either in C1 or in the C2 component at the convenience of the concerned departmet/teacher.
- The teachers concerned shall conduct test / seminar / case study, etc. The students should be informed about the modalities well in advance. The evaluated course assignments during component I (C1) and component II (C2) of the assessment are immediately provided to the candidates after obtaining acknowledgment in the register by the concerned teachers(s) and maintained by the Department. Before the commencement of the semester-end examination, the evaluated test, assignment, etc. of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The Internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations for III and IV Sem

C1 and C2 are internal tests to be conducted during the 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated based on skill, comprehension and recording of the results. The student has to compulsorily submit the practical record for evaluation during C1 and C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following

scheme: Experiment: 10 for C1 (10 marks)

Experiment: 10, Record: 05 for C2 (15 marks)

- The student is evaluated for 25 marks in C3 as per the following

scheme: Experiment: 20, Viva: 05 for C3 (25 marks)

The experimental portion of the evaluation (C3) is carried out as per the following scheme:

formula with proper units and explanation	03
Setting up the apparatus/circuit connections	03
Taking readings and tabulating	07
Calculations and Graph	07
Viva	05
Total	25

DSC THEORY QUESTION PAPER PATTERN FOR III AND IV SEM

Max Marks: 60 Exam duration: $2\frac{1}{2}$ hours

Part-A

I. One question from each unit is to be given with an internal choice. Each question carries 10 marks

$4 \times 10 = 40$

1 (a)
OR
(a)

2 (a)
OR
(a)

3 (a)
OR
(a)

4 (a)
OR
(a)

Part-B

II. One numerical problem must be given for each unit. Any three to be answered.

$3 \times 4 = 12$

5

6

7

8

Part-C

III One question must be given from each unit. Any four to be answered. $2 \times 4 = 08$

9 (a)
(b)
(c)
(d)
(e)
(f)

OPEN ELECTIVE THEORY QUESTION PAPER PATTERN FOR III AND IV SEM

Max Marks: 60 Exam duration: $2\frac{1}{2}$ hours

Part-A

I. One question must be given from each unit. Any three to be answered out of four questions $3 \times 15 = 45$

1

2

3

4

Part-B

II Numerical problem or short essay-type question must be given from each unit. Answer any three out of four questions. $3\times 5 = 15$

5

6

7

8

Board of Studies

Sl.No.	Name and address	Designation	Signature
1	Manjunatha R HoD, Dept of Physics SBRR Mahajana First Grade College (Autonomous), Mysuru. Mob. 9611075347 manjukalp@yahoo.com	Chairman	Manjunatha.R
2	Dr. Chandrashekar. M.S DOS in Physics, Manasagangothri, Mysuru.Mob.9448600121 msc@physics.uni-mysore.ac.in mschandrashekara@gmail.com	Member	MSc
3	Smt. Thejavathi N R Assistant Professor Department of Physics Govt. College (Autonomous) Mandya. Mob. 9481037230 thejavathi@gmail.com	Member	Thejavathi N R
4	Dr. Chethan Prathap K.N Assistant Professor Department of Physics University College of Science Tumkur University, Tumukur. Mob. 9686245523 cpforphysics@gmail.com	Member	Absent
5	Dr. Poornima S Assistant Professor SBRR Mahajana First Grade College (Autonomous), Mysuru. Mob: 9844815838 psmks2@gmail.com	Member	Poornima.S
6	Gayathri V Assistant Professor SBRR Mahajana First Grade College (Autonomous), Mysuru. Mob: 9980859170 gayatrivasu94@gmail.com	Member	Gayathri V 13/9/22
7	Smt. M. Sushma AssistantProfessor Department of Physics Yuvaraja's College, Mysore sushmamraju77@gmail.com Mob:9986163654	Member	M. Sushma 13/9/22

DEPARTMENT OF PHYSICS

Motto

Physics for Progress

Vision

Science and Technology for Better Future

Mission

Imparting Physics education with a professional approach to make citizens that are scientifically tempered to invent and discover

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge - Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis – Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions – Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research – Ability to formulate a hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO 5: Use of Modern Techniques/Tools – Use digital resources, various software/ platforms and appropriate techniques to interpret concepts of science.

PO 6: Impact of Science on Society – To prepare competent human resources and to develop scientific attitudes at local and global levels for social benefit.

PO 7: Environment and Sustainability – Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO 8: Moral and Ethical Values – Imbibe moral values and professional ethics to maintain integrality in a professional scenario while being aware of cultural diversities.

PO 9: Individual and Team Work with Time Management – Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication – Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance – Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning – Engage in the art of self-directed learning.

List of BoS Members

Sl.No	Category	Name & Designation	Address for Communication	Email & Mobile No.
1	Chairperson	Dr. Poornima S Assistant Professor	Department of Physics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	psmks2@gmail.com 9844815838
2	Nominee by the Vice Chancellor	Dr. Chandrashekar. M.S Professor	DOS in Physics, Manasagangothri, Mysuru.	msc@physics.uni-mysore.ac.in mschandrashekara@gmail.com 9448600121
3	Two Experts from Other University	Dr. Chethan Prathap K.N Assistant Professor	Department of Physics University College of Science Tumkur University, Tumkur.	cpforphysics@gmail.com 9686245523
4		Smt. Thejavathi N R Assistant Professor	Department of Physics Govt. College (Autonomous) Mandya.	thejavathi@gmail.com 9481037230
5	Member	Gayathri V Assistant Professor	Department of Physics SBRR Mahajana First Grade College (A), Jayalakshmipuram, Mysuru - 12	gayatrivasu94@gmail.com 9980859170
6	Alumnus	Smt. M. Sushma Assistant Professor	Department of Physics Yuvaraja's College, Mysuru.	sushmamraju77@gmail.com 9986163654

Course Structure (NEP 2020)

Discipline Specific Courses (DSC)

III Year

Course type, code and Title		Hours/week		Credits	Maximum Marks			Maximum Marks	Total Marks
		L	T/P	L:T:P	C1	C2	C3		
Physics- V Sem									
DSC(5) 232529	Classical Mechanics-I and Quantum Mechanics-I	4	0	4:0:2 6 credits	20	20	60	$2\frac{1}{2}$ hours	150
	DSC(5)-Lab	0	4		10	15	25	3 hours	
DSC(6) 232530	Elements of Atomic, Molecular and Laser Physics	4	0	4:0:2 6 credits	20	20	60	$2\frac{1}{2}$ hours	150
	DSC(6)-Lab	0	4		10	15	25	3 hours	
Physics- VI Sem									
DSC(7) 232629	Elements of Condensed Matter and Nuclear Physics	4	0	4:0:2 6 credits	20	20	60	$2\frac{1}{2}$ hours	150
	DSC(7)-Lab	0	4		10	15	25	3 hours	
DSC(8) 232630	Electronic Instrumentation & Sensors	4	0	4:0:2 6 credits	20	20	60	$2\frac{1}{2}$ hours	150
	DSC(8)-Lab	0	4		10	15	25	3 hours	
INT	Internship 23INTPHY01	2	0	2:0:0 2 credits	50	50	----	----	100

DSC(5) Syllabus for B.Sc. Physics (Basic and Honors)

Semester V

Course Code: 232529	**Course Title:** DSC(5)- Classical Mechanics-I and Quantum Mechanics-I (Theory) DSC(5)-Lab
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester-End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs)	
CO1	Comprehension of Newton's laws of motion, conservation momentum and energy. And to gain knowledge on constrains, degrees of freedom and harmonic oscillator.
CO2	To gain knowledge on Hamiltonian mechanics.
CO3	Identify the failure of classical physics at the microscopic level. Explain the minimum uncertainty of measuring both observables on any quantum state.
CO4	Analyze the time-dependent and time-independent Schrödinger equation for simple potentials like for instance one-dimensional potential well and Harmonic oscillator.

Course Content

Content	Hrs
Unit-1	
Introduction to Newtonian Mechanics: Frames of references, Newton's laws of motion, inertial and non-inertial frames. Mechanics of a particle, Conservation of linear momentum, Angular momentum and torque, conservation of angular momentum, work done by a force, conservative force and conservative energy. **Lagrangian formulation**: Constraints, Holonomic constraints, non-holonomic constraints, Scleronomic and Rheonomic constraints. Generalized coordinates, degrees of freedom, Principle of virtual work, D'Alembert's principle, Lagrange equations. Newton's equation of motion from Lagrange equations, simple pendulum, Atwood's machine and linear harmonic oscillator.	12 Hrs
Activity	3 Hrs
Unit-2	
Variational principle: Hamilton's principle, Deduction of Hamilton's principle, Lagrange's equation of motion from Hamilton's principle, Hamilton's principle for non-holonomic systems. **Hamiltonian Mechanics**: The Hamiltonian of a system, Hamilton's equations of motion, Hamilton's equations from variational principle, Integrals of Hamilton's equations, energy integrals, Canonical Transformations, Poison Brackets, fundamental properties and equations of motion in Poison Brackets.	12 Hrs
Activity	3 Hrs
Unit-3	
Introduction to Quantum Mechanics Brief discussion on failure of classical physics to explain black body radiation, Photoelectric effect, Compton effect, stability of atoms and spectra of atoms. Compton scattering: Expression for Compton shift (With derivation). Matter waves: de Broglie hypothesis of matter waves, Electron microscope, Wave description of particles by wave packets, Group and Phase velocities and relation between them, Experimental evidence for matter waves: Davisson- Germer experiment, G.P Thomson's experiment and its significance. Heisenberg uncertainty principle: Elementary proof of Heisenberg's relation between momentum and position, energy and time, angular momentum and angular position, illustration of uncertainty principle by Gamma ray microscope thought experiment. Consequences of the	12 Hrs

uncertainty relations: Diffraction of electrons at a single slit, why electron cannot exist in nucleus? Two-slit experiment with photons and electrons. Linear superposition principle as a consequence.	
Activity	3 Hrs
Unit-4	
Foundation of Quantum Mechanics Probabilistic interpretation of the wave function - normalization and orthogonality of wave functions, Admissibility conditions on a wave function, Schrödinger equation: equation of motion of matter waves - Schrodinger wave equation for a free particle in one and three-dimension, time-dependent and time-independent wave equations, Probability current density, equation of continuity and its physical significance, Postulates of Quantum mechanics: States as normalized wavefunctions. Dynamical variables as linear Hermitian operators (position, momentum, angular momentum, and energy as examples). Expectation values of operators and their time evolution. Ehrenfest theorem (no derivation), Commutator brackets- Simultaneous Eigen functions, Commutator bracket using position, momentum and angular momentum operators. Particle in a one-dimensional infinite potential well (derivation), degeneracy in three-dimensional case, particle in a finite potential well (qualitative), Transmission across a potential barrier, the tunnel effect (qualitative), scanning tunnelling microscope, One-dimensional simple harmonic oscillator (qualitative) - concept of zero - point energy.	12 Hrs
Activity	3 Hrs

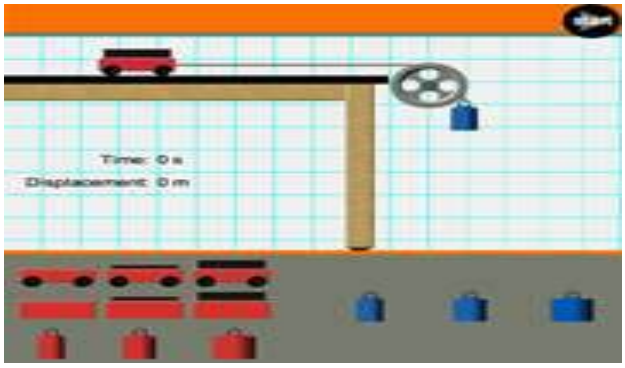
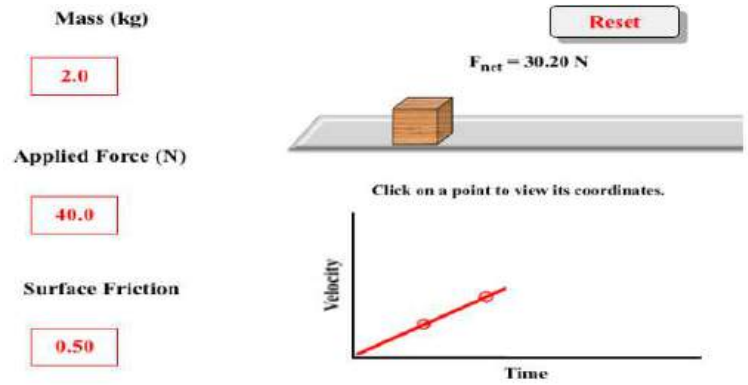
References

1.	Classical Mechanics, H.Goldstein, C.P. Poole, J.L. Safko, 3rd Edn. 2002, Pearson Education.
2.	Classical Mechanics: An introduction, Dieter Strauch, 2009, Springer
3.	Classical Mechanics, G. Aruldhas, 2008, Prentice-Hall of India Private limited, New Delhi.
4.	Classical Mechanics, Takwale and Puranik-1989, Tata Mcgraw Hill, new Delhi
5.	Concepts of Modern Physics, Arthur Beiser, McGraw-Hill, 2009.
6.	Physics for Scientists and Engineers with Modern Physics, Serway and Jewett, 9th edition, Cengage Learning, 2014.
7.	Quantum Physics, Berkeley Physics Course Vol. 4. E.H. Wichman, Tata McGraw-Hill Co., 2008.
8.	Six Ideas that Shaped Physics: Particle Behave like Waves, Thomas A. Moore, McGraw Hill, 2003.
9.	P M Mathews and K Venkatesan, A Textbook of Quantum Mechanics, Tata McGraw Hill publication, ISBN: 9780070146174.

10.	Ajoy Ghatak, S. Lokanathan, Quantum Mechanics: Theory and Applications, Springer Publication,ISBN 978-1-4020-2130-5.
11.	Modern Physics; R.Murugeshan & K.Sivaprasath; S. Chand Publishing.
12.	G Aruldhas, Quantum Mechanics, Phi Learning Private Ltd., ISBN: 97881203363.
13.	Gupta, Kumar & Sharma, Quantum Mechanics, Jai Prakash Nath Publications.
14.	Physics for Degree Students B.Sc., Third Year, C.L.Arora and P.S.Hemne, 1st edition, S.Chand & Company Pvt. Ltd., 2014.

Web links

1. https://byjusexamprep.com/newtonian-mechanics-i
2. https://brilliant.org/wiki/lagrangian-formulation-of-mechanics/
3. https://profoundphysics.com/hamiltonian-mechanics-for-dummies/
4. https://www.insidescience.org/second-quantum-revolution?gclid=EAIaIQobChMIyILpt5iJgQMVFJlmAh1h3Au2EAAYAiAAEgK2YfD_BwE.
5. https://www.cambridge.org/core/elements/abs/foundations-of-quantum-mechanics/7D2F34BA2F54B51FBB33D557B2058D8E

Activities	
1	 Atwood's Machine Everyone is fascinated by pulleys. In this Interactive, learners will attach two objects together by a string and stretch the string over a pulley. Both an Atwood's machine and a modified Atwood's machine can be created and studies. Change the amount of mass on either object, introduce friction forces, and measure distance and time in order to calculate the acceleration. Newton's Laws of Motion  Force When forces are unbalanced, objects accelerate. But what factors affect the amount of acceleration? This Interactive allows learners to investigate a variety of factors that affect the acceleration of a box pushed across a surface, The amount of applied force, the mass, and the friction can be altered. A plot of velocity as a function of time can be used to determine the acceleration. In the Balloon Car Lesson Plan, students build and explore balloon-powered cars. This lesson focuses mostly on energy, but it also demonstrates Newton's laws of motion. Guidance is provided for talking specifically about the third law of motion. *Question*: how does the air escaping the balloon relate to Newton's third law of motion? Does the car continue to coast after the balloon is deflated? Why or why not?

Most of the activities and lessons below *focus* on one or two of the laws of motion. The Build a Balloon Car activity specifically **talks about all three of Newton's laws of motion** students can observe when building and experimenting with a simple balloon-powered car. This is an accessible hands-on activity that uses recycled materials and balloons for a fun combined engineering design project and physics experiment. The activity can be used with a wide range of grade levels to introduce and demonstrate the laws of motion. See the "Digging Deeper" section for a straightforward discussion of how each law of motion can be identified in the balloon car activity. (For a related lesson plan, see Balloon Car Lesson Plan, which is NGSS-aligned for middle school and focuses on the third law of motion.)

In the Push Harder — Newton's Second Law , students build their own cars using craft materials and get hands-on exploring Newton's second law of motion and the equation "force equals mass times acceleration" (F=ma). Options for gathering real-time data include using a mobile phone and a sensor app or using a meter stick and a stopwatch. *Questions*: What is the relationship between force, mass, and acceleration? As force increases, what happens to acceleration?

	In the Skydive Into Forces , students make parachutes and then investigate how they work to slow down a falling object. As students investigate the forces that are involved, educators can introduce Newton's second law of motion and how different forces change the resulting speed of a falling object. *Questions*: What forces help slow down the speed of a falling object? How does a parachute help slow the fall?
2	Both standard cameras (DSLRs, phone cameras) and our scientific cameras work on the principle of photoelectric effect to produce an image from light, involving the use of **photodetectors**and**sensor pixels. Prepare a report on the working of digital camera.**
3	Demonstration of Heisenberg uncertainty principle in the context of diffraction at a single slit: The uncertainty in the momentum Δp_x correspond to the angular spread of principal maxima Θ. Then, $\Delta p_x = \sin\theta . p$ where p is the momentum of the incident photon. Conduct the diffraction at a slit experiment virtually using the following link *https://www.walter-fendt.de/html5/phen/singleslit_en.htm* **1.** Measure the angular spread (Θ) for different slit widths (Δx) for given wavelength of the incident photon. **2.** Determine the momentum of the incident photon using $$p = \frac{h}{\lambda}$$ **3.** Create a line of best fit through the points in the plot $\frac{1}{\Delta p_x}$ against $\Delta x$and find its slope. How this exercise is related to Heisenberg Uncertainty principle. Make a report of the observations.
4	Virtual lab to demonstrate Photoelectric effect using *Value@Amritha*:Conduct the virtual experiment using the following link

	https://vlab.amrita.edu/?sub=1&brch=195&sim=840&cnt=1 1. Determine the minimum frequency required to have Photoelectric effect for an EM radiation, when incident on a zinc metal surface. 2. Determine the target material if the threshold frequency of EM radiation is 5.5×10^{15} Hz in a particular photoelectric experimental set up. 3. Determine the maximum kinetic energy of photo-electrons emitted from a Zinc metal surface, if the incident frequency is 3×10^{15}Hz. **4.** What should be the stopping potential for photoelectrons if the target Material used is Platinum and incident frequency is 2×10^{15}Hz? Make a report of the calculations.
5	Visualization of wave packets using Physlet@Quantum Physics: The concept of group velocity and phase velocity of a wave packet can be studied using thislink https://www.compadre.org/PQP/quantum-need/section5_9.cfm Students can take up the exercises using the link which is as followshttps://www.compadre.org/PQP/quantum-need/prob5_11.cfm Six different classical wave packets are shown in the animations. Which of the wave packets have a phase velocity that is: greater than / less than / equal to the group velocity? Make a report of the observations.
6	Superposition of eigen states in an infinite one - dimensional potential well using QuVis (Quantum Mechanics Visualization Project): Construct different possible states by considering the first three eigen states and study the variation of probability density with position. Take the challenges after understanding the simulation and submit the report. The link is as follows https://www.standrews.ac.uk/physics/quvis/simulations_html5/sims/SuperpositionStates/SuperpositionStates.html
7	Determination of expectation values of position, momentum for a particle in a an infinite one - dimensional potential well using Physlet@Quantum Physics: The link to the visualization tool for the calculation is as follows https://www.compadre.org/PQP/quantum-theory/prob10_3.cfm A particle is in a one-dimensional box of length $L = 1$. The states shown are normalized. The results of the integrals that give $\langle x \rangle$ and $\langle x^2 \rangle$ and $\langle p \rangle$ and $\langle p^2 \rangle$. You may vary n from 1 to 10. a) What do you notice about the values of $\langle x \rangle$ and $\langle x^2 \rangle$ as you vary n? b) What do you think $\langle x^2 \rangle$ should become in the limit of $n \rightarrow \infty$? Why? c) What do you notice about the values of $\langle p \rangle$ and $\langle p^2 \rangle$ as you vary n? Make a report of the calculations.
8	Determination of expectation values for a particle in a one-dimensional harmonic oscillator using Physlet@Quantum Physics: The link to the visualization tool for the calculation is as follows https://www.compadre.org/PQP/quantum-theory/prob12_2.cfm A particle is in a one-dimensional harmonic oscillator potential ($\hbar = 2m = 1$; $\omega = k = 2$). The states shown are normalized. Shown are ψ and the results of the

	integrals that give $\langle x \rangle$ and $\langle x^2 \rangle$ and $\langle p \rangle$ and $\langle p^2 \rangle$. Vary n from 1 to 10. a) What do you notice about how $\langle x \rangle$ and $\langle x^2 \rangle$ and $\langle p \rangle$ and $\langle p^2 \rangle$ change? b) Calculate $\Delta x \,.\Delta p$ for $n = 0$. What do you notice considering $\hbar = 1$? c) What is E_n? How does this agree with or disagree with the standard case for the harmonic oscillator? d) How much average kinetic and potential energies are in an arbitrary energy state? Make a report of the calculations.
9	Calculate uncertainties of position and momentum for a particle in a boxusing Physlet@ Quantum Physics: The link to the visualization tool for the calculation is as follows https://www.compadre.org/PQP/quantum-theory/prob6_3.cfm A particle is in a one-dimensional box of length $L = 1$. The states shown are normalized. The results of the integrals that give $\langle x \rangle$ and $\langle x^2 \rangle$, and $\langle p \rangle$ and $\langle p^2 \rangle$. You may vary n from 1 to 10. a. For $n = 1$, what are Δx and Δp? b. For $n = 10$, what are Δx and Δp?
10	Write expressions for the three wave functions using Physlet@Quantum Physics: The link to the visualization tool for the calculation is as follows https://www.compadre.org/PQP/quantum-theory/prob8_1.cfm These animations show the real (blue) and imaginary (pink) parts of three time-dependent energy eigen functions. Assume x is measured in cm and time is measured in seconds. a. Write an expression for each of the three time-dependent energy Eigen functions in the form: $e^{i(kx-wt)}$. b. What is the mass of the particle? c. What would the mass of the particle be if time was being shown in ms? Make a report of the calculations.
11	If you store a file on your computer today, you probably store it on a solid-state drive (SSD), Make a detailed report on the role of quantum tunnelling in these devices.

DSC(5) lab

List of Experiments Credit : L:T:P 0:0:2

(Minimum EIGHT experiments must be completed)

Sl.No	Experiments
1.	To determine 'g', the acceleration due to gravity, at a given place, from the L – T^2 graph, for a simple pendulum.
2.	Studying the effect of mass of the bob on the time period of the simple pendulum.
3.	Studying the effect of amplitude of oscillation on the time period of the simple pendulum.
4.	Determine the acceleration of gravity is to using a Fly Wheel.
5.	Verification of the Principle of Conservation of Linear Momentum.
6.	To study the spectral characteristics of a photo-voltaic cell (Solar cell).
7.	To study the characteristics of solar cell.
8.	To find the value of e/m for an electron by Thomson's method using bar magnets.
9.	Determination of quantum efficiency of Photodiode.
10.	Determination of electron charge 'e' by Millikan's Oil drop experiment.

References

1.	B.Sc Practical Physics by C.L Arora.
2.	B.Sc Practical Physics by Harnam Singh and P.S Hemne.
3.	Practical Physics by G.S Squires.
4.	Scilab Manual for CC-XI: Quantum Mechanics &Applications (32221501) by Dr Neetu Agrawal, Daulat Ram College of Delhi.
5.	Scilab Textbook Companion for Quantum Mechanics by M. C. Jain.
6.	Computational Quantum Mechanics using Scilab, BIT Mesra.
7.	Advanced Practical Physics for Students by Worsnop B L and Flint H T.

Course Articulation Matrix- course code-232529												
Course outcomes	Program outcomes											
	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	1	2	2	2	2	1	2	2	1	2
CO2	3	2	1	1	2	2	2	1	2	1	___	1
CO3	3	3	1	1	2	2	2	1	2	2	___	1
CO4	3	3	1	1	2	2	2	1	2	2	1	1
Weighted average	3	2.5	1	1.25	2	2	2	1	2	1.5	1	1.25

DSC(6) Syllabus for B.Sc. Physics (Basic and Honors)

Semester V

Course Code: 232530	**Course Title:** DSC(6)- Elements of Atomic, Molecular and Laser Physics (Theory) DSC(6)-Lab
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester-End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs)	
CO1	Gain knowledge on various atomic models and implementing it for experimental methods.
CO2	Interpretation of atomic spectra of elements using vector atom model.
CO3	Implementing molecular spectra of compounds using basics of molecular physics.
CO4	Gaining knowledge on laser systems and their applications in various fields.

Course Content

Content	Hrs
Unit-1- Basic Atomic models	
Thomson's atomic model; Rutherford atomic model – Model, Theory of alpha particle scattering, Rutherford scattering formula; Bohr atomic model – postulates, Derivation of expression for radius, total energy of electron; Origin of the spectral lines; Spectral series of hydrogen atom; Effect of nuclear motion on atomic spectra - derivation; Ritz combination principle; Correspondence principle; Critical potentials – critical potential, excitation potential and ionisation potential; Atomic excitation and its types, Franck-Hertz experiment; Sommerfeld's atomic model – model, Derivation of condition for allowed elliptical orbits.	12 Hrs
Activity 1. Students to estimate radii of orbits and energies of electron in case of hydrogen atom in different orbits and plot the graph of radii / energy versus principal quantum number 'n'. Analyze the nature of the graph and draw the inferences. **2.** Students to search critical, excitation and ionisation potentials of different elements and plot the graph of critical /excitation / ionisation potentials versus atomic number/mass number/neutron number of element. Analyze the nature of the graph and draw the inferences.	3 Hrs
Unit-2- Vector atomic model and optical spectra	
Vector atom model – model fundamentals, spatial quantisation, spinning electron; Quantum numbers associated with vector atomic model; Coupling schemes – L-S and j-j schemes; Pauli's exclusion principle; Magnetic dipole moment due to orbital motion of electron – derivation; Magnetic dipole moment due to spin motion of electron; Lande g-factor and its calculation for different states; Stern-Gerlach experiment – Experimental arrangement and Principle; Fine structure of spectral lines with examples; Spin-orbit coupling/Spin-Orbit Interaction – qualitative; Optical spectra – spectral terms, spectral notations, selection rules, intensity rules; Fine structure of the sodium D-line; Zeeman effect: Types, Experimental study and classical theory of normal Zeeman effect, Zeeman shift expression (no derivation), examples; Stark effect: Experimental study, Types and examples.	12 Hrs
Activity	3 Hrs

1. Students to couple a p-state and s-state electron via L-S and j-j coupling schemes for a system with two electrons and construct vector diagrams for each resultant. Analyze the coupling results and draw the inferences. **2.** Students to estimate magnetic dipole moment due to orbital motion of electron for different states $^2P_{1/2}$, $^2P_{3/2}$, $^2P_{5/2}$, $^2P_{7/2}$, $^2P_{9/2}$ and $^2P_{11/2}$ and plot the graph of dipole moment versus total orbital angular momentum "J'. Analyze the nature of the graph and draw the inferences.	
Unit-3- Molecular Physics	
Types of molecules based on their moment of inertia; Types of molecular motions and energies; Born-Oppenheimer approximation; Origin of molecular spectra; Nature of molecular spectra; Theory of rigid rotator – energy levels and spectrum, Qualitative discussion on Non-rigid rotator and centrifugal distortion; Theory of vibrating molecule as a simple harmonic oscillator – energy levels and spectrum; Electronic spectra of molecules – fluorescence and phosphorescence; Raman effect – Stoke's and anti-Stoke's lines, characteristics of Raman spectra, classical and quantum approaches, Experimental study of Raman effect; Applications of Raman effect.	12 Hrs
Activity 1. Students to estimate energy of rigid diatomic molecules CO, HCl and plot the graph of rotational energy versus rotational quantum number 'J'. Analyse the nature of the graph and draw the inferences. Also students study the effect of isotopes on rotational energies. **2.** Students to estimate energy of harmonic vibrating molecules CO, HCl and plot the graph of vibrational energy versus vibrational quantum number 'v'. Analyse the nature of the graph and draw the inferences.	3 Hrs
Unit-4 -Laser Physics	
Ordinary light versus laser light; Characteristics of laser light; Interaction of radiation with matter - Induced absorption, spontaneous emission and stimulated emission with mention of rate equations; Einstein's A and B coefficients – Derivation of relation between Einstein's coefficients and radiation energy density; Possibility of amplification of light; Population inversion; Methods of pumping; Metastable states; Requisites of laser – energy source, active medium and laser cavity; Difference between Three level and four level lasers with examples; Types of lasers with examples; Construction and Working principle of Ruby Laser and He-Ne Laser; Application of lasers (qualitative) in science & research, isotope separation, communication, fusion, medicine, industry, war and space.	12 Hrs
Activity	3

1. Students to search different lasers used in medical field (ex: eye surgery, endoscopy, dentistry etc.), list their parameters and analyse the need of these parameters for specific application, and draw the inferences. Students also make the presentation of the study. **2.** Students to search different lasers used in defense field (ex: range finding, laser weapon, etc.), list their parameters and analyse the need of these parameters for specific application, and draw the inferences. Students also make the presentation of the study.	Hrs

References	
1.	Modern Physics, R. Murugeshan, Kiruthiga Sivaprakash, Revised Edition, 2009, S. Chand & Company Ltd.
2.	Atomic & Molecular spectra: Laser, Raj Kumar, Revised Edition, 2008, Kedar Nath Ram Nath Publishers, Meerut.
3.	Atomic Physics, S.N. Ghoshal, Revised Edition, 2013, S. Chand & Company Ltd.
4.	Concepts of Atomic Physics, S.P. Kuila, First Edition, 2018, New Central Book Agency (P) Ltd.
5.	Concepts of Modern Physics, Arthur Beiser, Seventh Edition, 2015, Shobhit Mahajan, S. Rai Choudhury, 2002, McGraw-Hill.
6.	Fundamentals of Molecular Spectroscopy, C.N. Banwell and E.M. McCash, Fourth Edition, 2008, Tata McGraw-Hill Publishers.
7.	Elements of Spectroscopy – Atomic, Molecular and Laser Physics, Gupta, Kumar and Sharma, 2016, Pragati Publications.

Web links

1. https://byjus.com/jee/atomic-structure/
2. https://chem.libretexts.org/Courses/Furman_University/CHM101%3A_Chemistry_and_Global_Awareness_(Gordon)/03%3A_Atoms_and_the_Periodic_Table/3.01%3A_Basic_Atomic_Theory
3. https://handwiki.org/wiki/Physics:Vector_model_of_the_atom
4. https://www.tandfonline.com/toc/tmph20/current
5. https://byjus.com/physics/laser/

DSC(6) lab

List of Experiments Credit : L:T:P 0:0:2

(Minimum EIGHT experiments must be completed)

Sl.No	Experiments
1	To determine Planck's constant using Photocell.
2	To determine Planck's constant using LED.
3	To determine wavelength of spectral lines of mercury source using spectrometer.
4	To determine the value of Rydberg's constant using diffraction grating and hydrogen discharge tube.
5	To determine the wavelength of H-alpha emission line of Hydrogen atom.
6	To determine wavelength of He-Ne laser using plane diffraction grating.
7	To determine the ionization potential of Xenon.
8	To determine the wavelength of laser using diffraction by single slit/double slits.
9	To determine the diameter of the given wire by LASER diffraction.
10	To determine angular spread of He-Ne laser using plane diffraction grating.

References

1	Practical Physics, D.C. Tayal, First Millennium Edition, 2000, Himalaya Publishing House.
2	B.Sc. Practical Physics, C.L. Arora, Revised Edition, 2007, S. Chand & Comp.Ltd.
3	An Advanced Course in Practical Physics, D. Chatopadhyaya, P.C. Rakshith, B. Saha, Revised Edition, 2002, New Central Book Agency Pvt. Ltd.
4	Physics through experiments, B. Saraf, 2013, Vikas Publications.

Course Articulation Matrix- course code-232530												
Course outcomes	Program outcomes											
	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	1	1	2	2	2	1	2	1	2	2
CO2	3	2	1	1	2	2	2	1	2	1	2	2
CO3	3	2	2	1	2	2	2	1	2	2	2	2
CO4	3	2	2	2	2	3	2	1	2	2	2	2
Weighted average	3	2	1.5	1.25	2	2.25	2	1	2	1.5	2	2

DSC(7) Syllabus for B.Sc. Physics (Basic and Honors)

Semester VI

Course Code: 232629	**Course Title:** DSC(7)- Elements of Condensed Matter & Nuclear Physics (Theory) DSC(7)-Lab
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester-End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs)	
CO1	Acquiring the knowledge on Crystal systems , X-rays and free electron theory of metals
CO2	Comprehending the knowledge of magnetism, dielectrics and superconductivity.
CO3	Analyzing the processes of alpha, beta and gamma decays based on well-established theories.
CO4	Gaining knowledge about the basic aspects of interaction of gamma radiation with matter by photoelectric effect, Compton scattering and pair production and to differentiate nuclear radiation detectors such as ionization chamber, Geiger-Mueller counter etc.

Course Content

Content	Hrs
Unit-1	
Crystal systems and X-rays: Crystal structure**:** Space Lattice, Lattice translational vectors, Basis of crystal structure, Types of unit cells, primitive, non-primitive cells.. Seven crystal system, Coordination numbers, Miller Indices, Expression for inter planner spacing. **X Rays**: Production and properties of X rays, Coolidge tube, Continuous and characteristic X-ray spectra; Moseley's law. **X-Ray diffraction**, Scattering of X-rays, Bragg's law. **Crystal diffraction:** Bragg's X-ray spectrometer- powder diffraction method, Intensity vs 2θ plot (qualitative). **Free electron theory of metals:** Classical free electron model (Drude-Lorentz model), expression for electrical and thermal conductivity, Weidman-Franz law, Failure of classical free electron theory; Quantum free electron theory, Fermi level and Fermi energy, Fermi-Dirac distribution function (expression for probability distribution F(E), statement only); Fermi Dirac distribution at T=0 and $E<E_f$, at $T\neq 0$ and $E>E_f$, F(E) vs E plot at T = 0 and $T\neq 0$. Density of states for free electrons (statement only, no derivation). Qualitative discussion of lattice vibration and concept of Phonons.; Specific heats of solids: Classical theory, Einstein's and Debye's theory of specific heats. Hall Effect in metals.	12 Hrs
Activity	3 Hrs
Unit-2	
Magnetic Properties of Matter Review of basic formulae: Magnetic intensity, magnetic induction, permeability, magnetic susceptibility, magnetization (M), Classification of Dia, Para, and ferro magnetic materials; Langevin Classical Theory of dia – and Paramagnetism. Curie's law, Ferromagnetism and Ferromagnetic Domains (qualitative). Discussion of B-H Curve. Hysteresis and Energy Loss, Hard and Soft magnetic materials **Dielectrics**: Static dielectric constant, polarizability (electronic, ionic and orientation), calculation of Lorentz field (derivation), Clausius-Mosotti equation (derivation), dielectric loss. Piezo electric effect, cause, examples and applications. **Superconductivity:** Definition, Experimental results – Zero resistivity and Critical temperature– The critical magnetic field – Meissner effect, Type I and type II superconductors.	12 Hrs
Activity	3 Hrs

Unit-3	
General Properties of Nuclei: Constituents of nucleus and their intrinsic properties, quantitative facts about mass, radii, charge density (matter density), binding energy, main features of binding energy versus mass number curve, angular momentum, parity, magnetic moment, electric moments **Radioactivity decay:** Radioactivity: definition of radioactivity, half-life, mean life,radioactivity equilibrium (a) Alpha decay: basics of α-decay processes, theory of α emission (brief), Gamow factor, Geiger-Nuttall law. (b) β-decay: energy kinematics for β-decay, positron emission, electron capture, neutrino hypothesis. (c) Gamma decay: Gamma rays' emission & kinematics, internal conversion (Definition).	12 Hrs
Activity	3 Hrs
Unit-4	
Interaction of Nuclear Radiation with matter: Gamma ray interaction through matter, photoelectric effect, Compton scattering, pair production, Energy loss due to ionization (quantitative description of Bethe Block formula), energy loss of electrons, introduction of Cerenkov radiation **Detector for Nuclear Radiations**: Gas detectors: estimation of electric field, mobility of particle, for ionization chamber and GM Counter. Basic principle of Scintillation Detectors and construction of photo-multiplier tube (PMT). Semiconductor Detectors (Si and Ge) for charge particle and photon detection (concept of charge carrier and mobility) qualitative only, Accelerators: Cyclotrons and Synchrotrons.	12 Hrs
Activity	3Hrs

References

1	Solid State Physics-R. K. Puri and V.K. Babber., S.Chand publications,1st Edition(2004).
2	Fundamentals of Solid State Physics-B.S.Saxena,P.N. Saxena,Pragati prakashan Meerut(2017).
3	Introductory nuclear Physics by Kenneth S. Krane (Wiley India Pvt. Ltd., 2008).
4	Nuclear Physics, Irving Kaplan, Narosa Publishing House
5	Introductiontosolid StatePhysics,***CharlesKittel***, VIIedition, (**1996**)
6	Solid State Physics-**A JDekker**, MacMillanIndia Ltd, (**2000**)
7	Essentialof crystallography**,MA Wahab**, Narosa Publications (**2009)**
8	Solid State Physics-**SO Pillai**-New Age Int. Publishers(**2001**).
9	Concepts of nuclear physics by Bernard L. Cohen. (Tata McGraw Hill, 1998).
10	Introduction to the physics of nuclei & particles, R.A. Dunlap. (Thomson Asia, 2004).

11	Introduction to High Energy Physics, D.H. Perkins, Cambridge Univ. Press
12	Basic ideas and concepts in Nuclear Physics - An Introductory Approach by K. Heyde (Institute of Physics (IOP) Publishing, 2004).
13	Radiation detection and measurement, G.F. Knoll (John Wiley & Sons, 2000).

Web links

1. https://en.wikipedia.org/wiki/X-ray_crystallography
2. https://semesters.in/free-electron-theory/
3. https://www.vedantu.com/physics/magnetic-properties-of-matter
4. https://byjus.com/physics/radioactive-decay/
5. https://chem.libretexts.org/Bookshelves/General_Chemistry/Book%3A_General_Chemistry%3A_Principles_Patterns_and_Applications_(Averill)/24%3A_Nuclear_Chemistry/24.04%3A_The_Interaction_of_Nuclear_Radiation_with_Matter#:~:text=1%20Radiation%20Damage%20When%20high,such%20as%20ductility%20or%20color.

Suggested Activities	
1	Students to construct seven crystal systems with bamboo sticks and rubber bands. Use foam ball as atoms and study the BCC and FCC systems.
2	Students to search the characteristic X ray wavelength of different atoms/elements and plot characteristic wavelength vs atomic number and analyse the result and draw the inference.
3	Magnetic field lines are invisible. Students to trace the magnetic field lines using bar magnet and needle compass. https://nationalmaglab.org/magnet-academy/try-this-at-home/drawing-magnetic-field-lines/
4	Using vegetable oil and iron fillings students to make ferrofluids and see how it behaves in the presence of magnetic field. https://nationalmaglab.org/magnet-academy/try-this-at-home/making-ferrofluids/
5	Study the decay scheme of selected alpha, beta & gamma radioactive sources with the help of standard nuclear data book.
6	Calculate binding energy of some selected light, medium and heavy nuclei. Plot the graph of binding energy versus mass number A
7	Study the decay scheme of standard alpha, beta and gamma sources using nuclear data book.
8	Make the list of alpha emitters from Uranium series and Thorium series.

	Search the kinetic energy of alpha particle emitted by these alpha emitters. Collect the required data such as half life or decay constant. Verify Geiger-Nuttal in each series.
9	Study the Z dependence of photoelectric effect cross section.
10	Study the Z dependence of common cross section for selected gamma energies and selected elements through theoretical calculation.
11	List the materials and their properties which are used for photocathode of PMT.
12	Study any two types of PMT and their advantages and disadvantages.

DSC(7) lab

List of Experiments Credit : L:T:P 0:0:2

(Minimum EIGHT experiments must be completed)

Sl.No	Experiments
1	Energy gap of semiconductor by using meter bridge board.
2	Temperature coefficient of resistance of a Thermistor
3	Analysis of X-ray diffraction spectra and calculation of lattice parameter.
4	Determination of Dielectric Constant of solid
5	B-H Curve Using CRO.
6	Study of inverse square law of gamma rays using GM tube.
7	Study the characteristics of Geiger-Mùller Tube. Determine the threshold voltage, plateau region and operating voltage.
8	Study the absorption of beta particles in aluminium foils using GM counter. Determine mass attenuation coefficient of Aluminium foils.
9	Study the attenuation of gamma rays in lead foils using Cs-137 source and G M counter. Calculate mass attenuation coefficient of Lead for Gamma.
10	Determine the end point energy of Tl-204 source by studying the absorption of beta particles in aluminium foils.

References

1	IGNOU: Practical PhysicsManual
2	Saraf : ExperimentinPhysics, VikasPublications
3	S.P. Singh : Advanced Practical Physics
4	Melissons : ExperimentsinModern Physics
5	Misra and Misra, PhysicsLab.Manual, South Asianpublishers, (**2000**)
6	Gupta and Kumar, Practical physics, Pragatiprakashan, (**1976**)

Course Articulation Matrix- course code-232629												
Course outcomes	Program outcomes											
	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	1	1	2	2	2	1	2	1	1	2
CO2	3	2	2	1	2	2	2	1	1	1	1	2
CO3	3	2	1	1	2	2	2	1	2	2	1	2
CO4	3	2	1	1	2	2	2	1	2	2	1	2
Weighted average	3	2	1.25	1	2	2	2	1	1.75	1.5	1	2

DSC(8) Syllabus for B.Sc. Physics (Basic and Honors)

Semester VI

Course Code: 232630	**Course Title:** DSC(8)- Electronic Instrumentation and Sensors (Theory) DSC(8)-Lab
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: $2\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	**Semester-End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs)	
CO1	Identifying the different types of tests and measuring instruments used in practice and understand their basic working principles.
CO2	Comprehending and giving a mathematical treatment of the working of rectifiers, filter, data converters and different types of transducers.
CO3	Implementation and understanding the data conversion and to analyze its output display.
CO4	Gaining the knowledge about the different types of transducers and sensors.

Course Content

Content	Hrs
Unit-1	
Power supply AC power and its characteristics, Single phase and three phase, Need for DC power supply and its characteristics, line voltage and frequency, Rectifier bridge, Filters: Capacitor and inductor filters, L-section and π-section filters, ripple factor, electronic voltage regulators, stabilization factor, voltage regulation using ICs. **Basic electrical measuring instruments** Cathode ray oscilloscope- Block diagram, basic principle, electron beam, CRT features, signal display. Basic elements of digital storage oscilloscopes. Basic DC voltmeter for measuring potential difference, Extending Voltmeter range, AC voltmeter using rectifiers. Basic DC ammeter, requirement of a shunt, Extending of ammeter ranges. **Topics for self-study:** Average value and RMS value of current, Ripple factor, Average AC input power and DC output power, efficiency of a DC power supply. Multirange voltmeter and ammeter.	12 Hrs
Activity Design and wire your own DC regulated power supply. Power output: 5 V, 10 V, ± 5 V. Components required: A step down transformer, semiconductor diodes (BY126/127), Inductor, Capacitor, Zener diode or 3-pin voltage regulator or IC. Measure the ripple factor and efficiency at each stage. Tabulate the result. 1. Extend the range of measurement of voltage of a voltmeter (analog or digital) using external component and circuitry. Design your own circuit and report. 2. Measure the characteristics of the signal waveform using a CRO and function generator. Tabulate the frequency and time period. Learn the function of Trigger input in an CRO. 3. Learn to use a Storage Oscilloscope for measuring the characteristics of a repetitive input signal. Convince yourself how signal averaging using Storage CRO improves S/N ratio.	3Hrs

Unit-2	
Wave form generators and Filters Basic principle of standard AF signal generator: Fixed frequency and variable frequency, AF sine and square wave generator, basic Wein-bridge network and oscillator configuration, Triangular and saw tooth wave generators, circuitry and waveforms. Passive and active filters. Fundamental theorem of filters, Proof of the theorem by considering a symmetrical T-network. Types of filters, Circuitry and Cut-off frequency and frequency response of Passive (RC) and Active (op-amp based) filters: Low pass, high pass and band pass.	12 Hrs
Activity 1. Measure the amplitude and frequency of the different waveforms and tabulate the results. Required instruments: A 10 MHz oscilloscope, Function generators (sine wave and square wave). 2. Explore where signal filtering network is used in real life. Visit a nearby telephone exchange and discuss with the Engineers and technicians. Prepare a report. 3. Explore op-amp which works from a single supply biasing voltage (+15V). Construct an inverting/non-inverting amplifier powered by a single supply voltage instead of dual or bipolar supply voltage. 4. Op-amp is a linear (analog) IC. Can it be used to function as logic gates? Explore, construct and implement AND, OR NAND and NOR gate functions using op-amps. Verify the truth table. Hint: LM3900 op-amp may be used. The status of the output may be checked by LED.	3 Hrs
Unit-3	
Data Conversion and display Digital to Analog (D/A) and Analog to Digital (A/D) converters – A/D converter with pre-amplification and filtering. D/A converter - Variable resistor network, Ladder type (R-2R) D/A converter, Op-amp based D/A converter. Digital display systems and Indicators- Classification of displays, Light Emitting Diodes (LED) and Liquid Crystal Display (LCD) – Structure and working. Data Transmission systems – Advantages and disadvantages of digital transmission over analog transmission, Pulse amplitude modulation (PAM), Pulse time modulation (PTM) and Pulse width modulation (PWM)- General principles. Principle of Phase Sensitive Detection (PSD). Topic for self-study: Lock-in amplifier and its application, phase locked loop.	12 Hrs

Activity 1. Explore where modulation and demodulation technique is employed in real life. Visit a Radio broadcasting station. (Aakashavani or Private). Prepare a report on different AM and FM stations. **2.** Explore and find out the difference between a standard op-amp and an instrumentation op-amp. Compare the two and prepare a report.	3 Hrs
Unit-4	
Transducers and sensors Definition and types of transducers. Basic characteristics of an electrical transducer, factors governing the selection of a transducer, Resistive transducer-potentiometer, Strain gauge and types (general description), Resistance thermometer-platinum resistance thermometer. Thermistor. Inductive Transducer-general principles, Linear Variable Differential Transducer (LDVT)- principle and construction, Capacitive Transducer, Piezo-electric transducer, Photoelectric transducer, Photovoltaic cell, photo diode and phototransistor – principle and working.	12 Hrs
Activity **1.** Construct your own thermocouple for the measurement of temperature with copper and constantan wires. Use the thermocouple and a Digital multimeter (DMM). Record the emf (voltage induced) by maintaining one of the junctions at a constant temperature (say at 0° C, melting ice) and another junction at variable temperature bath. Tabulate the voltages induced and temperatures read out using standard chart (Chart can be downloaded from the internet). **2.** Observe a solar water heater. Some solar water heaters are fitted with an anode rod (alloy of aluminium). Study why it is required. Describe the principle behind solar water heater.	3 Hrs

References	
1	Physics for Degree students (Third Year) – C.L. Arora and P.S. Hemne, S, Chand and Co. Pvt. Ltd. 2014 (For Unit-1, Power supplies)
2	Electronic Instrumentation, 3rd Edition, H.S. Kalsi, McGraw Hill Education India Pvt. Ltd. 2011 (For rest of the syllabus)
3	Instrumentation – Devices and Systems (2nd Edition)– C.S. Rangan, G.R. Sarma, V.S.V. Mani, Tata McGraw Hill Education Pvt. Ltd. (Especially for circuitry and analysis of signal generators and filters)

Web links

1. https://mechanicaljungle.com/types-of-measuring-instruments/
2. https://www.tutorialspoint.com/linear_integrated_circuits_applications/linear_integrated_circuits_applications_waveform_generators.htm
3. https://www.talend.com/resources/what-is-data-conversion/
4. https://byjus.com/physics/difference-between-transducer-and-sensor/#:~:text=A%20transducer%20is%20a%20device,it%20into%20a%20measurable%20output.
5. https://www.electronics-tutorials.ws/io/io_1.html

DSC(8) lab

List of Experiments

Credit : L:T:P 0:0:2

(Minimum EIGHT experiments must be completed)

Sl.No	Experiments
1	Bridge rectifier with and without filter.
2	Phase measurement in LCR circuit using CRO.
3	Study of Zener diode as a voltage regulator.
4	RC low pass and high pass filters.
5	Study of Wien bridge oscillator.
6	Calibration of a low range voltmeter using a potentiometer.
7	Calibration of an ammeter using a potentiometer.
8	Study the frequency response of a first order op-amp low pass filter.
9	Study the characteristics of a LDR.
10	Study the amplitude modulation using a transistor.

References

1	Advanced Practical Physics for students, B. L. Flint and H.T. Worsnop, 1971, Asia Publishing House.
2	B.Sc. Practical Physics, C.L. Arora (Revised Edition), S. Chand and Co. Ltd. 2007.
3	Practical Physics, D.C. Tayal, First Millennium Edition, Himalaya Publishing House, 2000.

Course Articulation Matrix- course code-232630												
Course outcomes	Program outcomes											
	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	2	2	2	2	2	1	2	2	2	2
CO2	3	2	2	2	2	2	2	1	2	2	2	2
CO3	3	2	2	2	2	2	2	1	2	2	2	2
CO4	3	2	2	2	2	2	2	1	2	2	2	2
Weighted average	3	2	2	2	2	2	2	1	2	2	2	2

Continuous Formative Evaluation/ Internal Assessment

Total marks for each course shall be based on continuous assessments and semester-end examinations. The pattern of 40:60 for IA and Semester End theory examinations respectively and 50:50 for IA and Semester End practical examinations respectively.

	Theory	Practical
Total Marks for each Course	100 marks	50 marks
Continuous assessment-1 (C1)	20 marks	10 marks
Continuous assessment-2 (C2)	20 marks	15 marks
Semester End Examination (C3)	60 marks	25 marks

The evaluation process of IA marks shall be as follows:

a) The first component (C1) of the assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, fieldwork, project work, etc. This assessment and score process should be completed after completing 50% of the syllabus of the course/s and within 45 working days of the semester program

b) The second component (C2) of the assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum/project work, etc. This assessment and score process should be based on the completion of the remaining 50 percent of the syllabus of the courses of the semester.

c) During the 17th – 19th week of the semester, a semester-end examination shall be conducted by the University for each Course. This forms the third and final component of the assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on the scheduled date due to genuine reasons, such a candidate may appeal to the Principal. The Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct a special test for such candidate on the date fixed by the concerned teacher but before the commencement of the concerned semester-end examinations.

e) For assignments, tests, case study analysis, etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets, etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests/assignment/work, etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under.

	C1 marks	C2 marks	Total Marks
Session Test	20	---	20
Seminars/Presentations/Activity/ Case study /Assignment / Fieldwork / Project work etc.	---	20	20
Total	20	20	40

- For the practical course of full credits, the Seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance. (the ratio is 25 (10 + 15) and 25. Evaluated for a total of 50 Marks).
- Conduct of Test , Seminar, Case study / Assignment, etc. can be either in C1 or in the C2 component at the convenience of the concerned departmet/teacher.
- The teachers concerned shall conduct test / seminar / case study, etc. The students should be informed about the modalities well in advance. The evaluated course assignments during component I (C1) and component II (C2) of the assessment are immediately provided to the candidates after obtaining acknowledgment in the register by the concerned teachers(s) and maintained by the Department. Before the commencement of the semester-end examination, the evaluated test, assignment, etc. of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The Internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment marks.

Scheme of Valuation for Practical Examinations

C1 and C2 are internal tests to be conducted during the 8th and 16th weeks respectively of the semester. C3 is the semester-end examination conducted for 3 hours. The student will be evaluated based on skill, comprehension and recording of the results. The student has to compulsorily submit the practical record for evaluation during C1 and C2. For C3, the record has to be certified by the Head of the Department.

- The student is evaluated for 25 marks in C1 and C2 as per the following scheme:

Experiment: 10 for C1 (10 marks)

Experiment: 10, Record: 05 for C2 (15 marks)

- The student is evaluated for 25 marks in C3 as per the following scheme:

Experiment: 20, Viva: 05 for C3 (25 marks)

The experimental portion of the evaluation (C3) is carried out as per the following scheme:

formula with proper units and explanation	03
Setting up the apparatus/circuit connections	03
Taking readings and tabulating	07
Calculations and Graph	07
Viva	05
Total	25

Internship

Semester: VI

Course Code: 23INTPHY01	**Course Title:** Internship
Course Credits: 02	**Hours of Teaching/Week:**
Total Contact Hours: 90 Hours Internship	**Formative Assessment Marks:** 100 Marks(C1+C2= 50 + 50)

Note: This course will run as per the guidelines defined by the BoS Physics, University of Mysore, Mysuru and the same is approved by BoS, Physics SBRR Mahajana First Grade College (Autonomous), Mysuru.

Course Outcomes (COs):

CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation and to create interest towards research.

CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

Course Articulation Matrix – 23INTPHY01

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	-	-	1	3	3	2	2
CO 2	3	3	3	3	3	2	1	1	3	3	2	2
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**1**	**1**	**3**	**3**	**2**	**2**

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during 8th and 16th weeks respectively for the semester. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

- **The student is evaluated for 100 marks as per the following scheme:**

Project Progress Presentation (**C1**): 50 marks

Project Development and Report (**C2**): 50 marks

Assessment Criteria	**Marks**
Project Presentation Skills	50
Project Development Skills and Report	50
Total	**100**

DSC THEORY QUESTION PAPER PATTERN FOR V AND VI SEMESTER

Max Marks: 60 Exam duration: $2\frac{1}{2}$ hours

Part-A

I. One question from each unit is to be given with an internal choice.
Each question carries 10 marks

$4 \times 10 = 40$

1 (a)
OR
(a)

2 (a)
OR
(a)

3 (a)
OR
(a)

4 (a)
OR
(a)

Part-B

II. One numerical problem must be given for each unit. Any three to be answered.

$3 \times 4 = 12$

5

6

7

8

Part-C

III One question must be given from each unit. Any four to be answered. $2 \times 4 = 08$

9 (a)
(b)
(c)
(d)
(e)
(f)

Mahajana Education Society (R.)
Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

DEPARTMENT OF PSYCHOLOGY

Motto: Enriching scientific thought & Promoting Pro-Social Behavior.

Vision: Thriving towards a scientifically driven environment for the development of Psychological literacy.

Mission: Enabling the 'Learner' to develop the Research attitude and explore new dimensions in Behavioral Sciences.

Program Outcomes (PO,s) - "Bachelors of Arts"	
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

OBJECTIVES: Psychology

1.) **Promote higher learning and research orientation among students, through effective establishment of the interface between the field of Psychology and its empirical nature.**

2.) **Establish Introspective approach through – Educational tours, Internship Programmes, Minor Projects ect; to gear-up the Learner to explore the dynamics of Applied Psychology.**

3.) **Kindle "Self – Enhancing and Innovative" skills among students through broader insights into the realm of Psychology.**

4.) **Inspire Students to foresee various promising Career prospects available in the field of Mental Health Sciences through the pursuit of Psychology.**

5.) **Endow a sense of 'Professional Integrity' in the learner through realizing the significance of Psychology in facilitating Mental Health services.**

List Of BOS Members in Psychology

Sl.No.	Category	Name	Designation	Address for Communication	E-mail and Mobile No.
1.	HoD	Smt. Sujata. M	Asst. Professor & HoD	Dept. of Psychology SBRR Mahajana First Grade College, Mysore	Sujatam.fgc@mahajana.edu.in 9886191174
2.	Two Experts from Outside the parent University	1.) Dr Rekha	Associate Professor	Dept. of Psychology Govt. College for Women (Autonomous) Mandya.	rekhamsumesh@gmail.com 9986627024
		2.) Dr Archana Bhatt K	Associate Professor & HoD	UG & PG Dept. of Psychology Kateel Ashok Pai Memorial College – Shivamogga, Kuvempu University.	archana.kallahalla@gmail.com 9538298660
3.	Nominee by the Vice Chancellor	Dr. Mridula Singh	Associate Professor	Dept. of Psychology Maharajas College, Mysore.	mridulasingh15@gmail.com 9448312327
4.	One Person from Industry /Corporate Sector /Allied area	Dr. Lancy D'Souza	Professor & HoD,	Dept. of Psychology, Maharaja's College Mysore	lancyd@gmail.com
6.	Alumnus	Siyana Salim	P G Student M.Sc Clinical Psychology	Dept. of Clinical Psychology St. Agnes College Mangalore	ishasalim31@gmail.com 9071693910

Course Structure (NEP 2020)

Discipline Specific Courses (DSC) & Open Elective (OE)

I Sem Course Code - 211165	II Sem Course Code - 211265

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		Marks
PSYCHOLOGY – I Sem									
DSC(1) - 211165 **DSC (1) -Lab**	**Foundations of Psychology- I**	**4**	**0**	**4:0:2**	**20**	**20**	**60**	**2:30 Hours**	**150**
	Psychology Practicals	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
OE (1) 21OEPSY101 21OEPSY102	**Psychology of Health**	**3**	**0**	**3:0:0**	**20**	**20**	**60**	**2:30 Hours**	**100**
	Life Skills -I	**3**	**0**	**3:0:0**	**20**	**20**	**60**	**2:30 Hours**	**100**
PSYCHOLOGY – II Sem									
DSC(2) - 211265 **DSC(2) - Lab**	**Foundations of Psychology-II**	**4**	**0**	**4:0:2**	**20**	**20**	**60**	**2:30 Hours**	**150**
	Psychology Practicals	**0**	**4**		**10**	**15**	**25**	**3 Hours**	
OE (2) 21OEPSY201 21OEPSY202	**Youth, Gender & Identity**	**3**	**0**	**3:0:0**	**20**	**20**	**60**	**2:30 Hours**	**100**
	Life Skills -II	**3**	**0**	**3:0:0**	**20**	**20**	**60**	**2:30 Hours**	**100**

DSC (1) Syllabus for B.A PSYCHOLOGY (Basic and Honors)

Semester I

Course Code: 211165	**Course Title:** DSC(1)- Foundations of Psychology - I (Theory) DSC(1) Lab-Psychology (Practical)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2:30 Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 – Articulate the fundamentals of Psychology and infer the basic concepts comprehensively.
CO2 – Concretely relate and synthesize the "Biological basis of Behaviour".
CO3 – Define, Integrate, and determine the nature and nexus among various physical and cognitive processes.
CO4 – Analyze and contrast the inherent characteristics of Learning and its attribution to behaviour.
CO5 – Summarize and demonstrate the structure and significance of Memory in human functioning.

Course Content

Content	Hours
UNIT – 1 GENESIS AND GOALS OF PSYCHOLOGY	
• Psychology: History and Development of Psychology; Definition and Goals of Psychology- Understanding, Describing, Predicting and Control of Behaviour. • Key Perspectives: Psychodynamic, Behavioural, Humanistic, Biological and Cognitive. • Branches of Psychology - General, Bio–Physiological, Social, Child, Developmental, Abnormal and Cognitive Psychology. • Methods in Psychology: Observation, Experimental, Clinical and Survey/Questionnaire Methods.	**13 Hrs**
UNIT – 2 BIOLOGY AND BEHAVIOUR	
• Neuron: Structure and functions; Neural impulse; Synapse and Neurotransmitters • Nervous system: Structure and Functions of Central nervous system and Peripheral nervous system • Advanced Methods of studying brain functions: Various Scanning methods. • Endocrine system: Pituitary, Thyroid, Parathyroid, Adrenal and Gonads – Functions	**10 Hrs**

UNIT – 3 SENSATION, ATTENTION AND PERCEPTION	
• Sensation: Definition and Characteristics. • Types of Senses and functions. • Attention: Meaning and Phenomena (Span of Attention, Division of Attention, Fluctuation and distraction), Determinants of Attention. • Perception: Meaning and Characteristics, Gestalt - Laws of Perceptual Organization. • Depth Perception: Meaning, Monocular and Binocular Cues, Perceptual Constancies – Size, Shape & Color. • Errors in Perception - 1) Illusion - Types - Horizontal-Vertical, Muller Lyer and Illusion of Movement. 2) Hallucination	**12 Hrs**
UNIT – 4 LEARNING	
• Introduction: Definition, Factors Influencing Learning: Motivation, Reinforcement and Association. • Types of Learning: Trial and Error Learning- Thorndike's Experiment and Laws; Classical Conditioning- Acquisition, Spontaneous Recovery, Generalization, Discrimination, Extinction and Higher Order Conditioning. • Operant Conditioning: Experiment - Reinforcement, Schedules of Reinforcement, Shaping and Chaining. • Cognitive Learning: Insightful (Kohler) and Observational (Bandura).	**11 Hrs**
UNIT – 5 MEMORY AND FORGETTING	
• Memory: Meaning, Basic Processes – Encoding, Storage and Retrieval. • Types of Memory: Sensory Memory, Short-Term Memory, Long-Term Memory, Working Memory, Semantic Memory, Autobiographical Memory and Flashbulb Memory. • Techniques to Improve Memory: Mnemonics, Chunking, SQ3R (Survey, Question, Read, Recite and Review) • Forgetting: Nature – Normal & Abnormal forgetting and Causes of Forgetting.	**10 Hrs**

References:

1. Robert Feldman (2011) Essential of *Understanding Psychology* 10th Edition, ISBN-13-9781259003059/ISBN–10–1259003051

2. Morgan, C. T., King, R. A., Weiss, J. R. and Schopler, J. (2012). (Latest Edition).*Introduction to Psychology.* Tata McGraw Hill Education Pvt. New Delhi

3. Nataraj, P. (latest edition): *Psychology for Beginners*. Mysore :Srinivas publication

4. Parameshwaran, E. G., & Beena, C. (2010): *An Invitation to Psychology*, Neelkamal Pvt. Hyderabad

5. Mangal S.K.(2000) General Psychology. New Delhi: Sterling Publishers Pvt.Ltd.

6. Shashi Jain (Latest edition). Introduction to Psychology. New Delhi: Kalyani Publishers.

7. Rajamanickam, M. (2008). Modern General Psychology. Vol 1 & 2. Concept Publisher. New Delhi.

Online / E-sources

1.) Introduction to Psychology - Open Textbook Library (umn.edu)

2.) American Psychological Association (APA)

3.) Beginning Psychology (lardbucket.org)

4.) Psychology (d3bxy9euw4e147.cloudfront.net)

5.) https://youtu.be/ysda8PHQnGY - Introduction to Psychology

6.) https://youtu.be/bl08fSne14U - Psychology As Science

SEMESTER I

(DSC) Practical

PRACTICALS DSC - 211165

Course duration: 14 weeks with 4 hours of lab work per week amounting to 2 credits.

PRACTICALS DSC - Foundations of Psychology - I

Any 6 of the following experiments

4 hours per week. Maximum Marks: 50

1. **Directed Observation on the accuracy of report**
2. **Color blindness**
3. **Localization of sound**
4. **Set on Attention**
5. **Bilateral transfer of training**
6. **Muller-Lyre Illusion**
7. **Meaning on retention**
8. **Retroactive Inhibition**

STATISTICS

- Grouping of Data: Tabulation and frequency distribution
- Measures of Central tendency: Mean and Median for Grouped and Ungrouped data

Course Articulation Matrix – 211165

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	3	3	3	-	2	2	3	-	2
CO 2	3	2	1	3	3	2	-	-	-	3	-	2
CO 3	3	3	1	3	3	2	-	-	2	3	-	1
CO 4	3	3	2	2	3	3	-	1	1	3	-	1
CO 5	3	2	1	2	3	3	-	1	1	3	-	1
Weighted Average	**3**	**2.4**	**1.2**	**2.6**	**3**	**2.6**	**0**	**1.3**	**1.5**	**3**	**0**	**1.4**

OE (1) Syllabus of Psychology

Semester I

Course Code: 21OEPSY101	**Course Title O.E (1): Psychology of Health & Wellbeing**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2:30 Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1 – Analyze and describe the spectrum of health & illness for better health management.
CO2 - Identify and introspect the impact of stressors and determine the coping strategies.
CO3 - Conceptualize and reflect upon the health protective and health compromising behaviors, further determine illness management.
CO4 – Synthesize and determine various strategies to Life enhancement for overall wellbeing.

Course Content

Content	Hours
UNIT – 1 Introduction	
Illness, Health and Wellbeing; Health continuum; Models of Health and Illness: Medical, Bio-psychosocial; Holistic Health.	**11 Hrs**
UNIT – 2 Stress & Coping	
Stress and Coping: Nature and Sources of Stress; Personal and Social Mediators of Stress; Effects of Stress on Physical and Mental Health; Coping and Stress management.	**11 Hrs**
UNIT – 3 Health Management	
Health Management: Health enhancing behaviours: Exercise, Nutrition, Meditation, Yoga; Health compromising behaviours - alcoholism, smoking, internet addiction; Illness Management – Prevention & Treatment.	**10 Hrs**
UNIT – 4 Promoting Human Strengths and Life Enhancement	
Promoting Human Strengths and Life Enhancement: Strength- Meaning and Realizing strength; Maximizing Unrealized Strength. Weakness – Meaning, Identifying & Overcoming – Practices of Mindfulness.	**10 Hrs**

References:

Carr. A. (2004) Positive Psychology: The science of happiness and human strength UK: Routledge.

DiMatteo, M.R &. Martin, L.R.(2002). Health Psychology. New Delhi: Pearson.

Farshaw, M 2DD3) Advanced PsychoIo9Y: Health Psychology. London:Hodder and Stoughton

Forshaw, M. (2003).Advanced Psychology: Health Psychology. London: Hodder and Stou9htan.

Hick.J.W. (2005).Fifty signs of Mental Health.A Guide to understanding mental health.Yale University Press.

Snyder, C R., & Lopez. S.J.(2007) Positive Psychology: The scientific and practical explorations of human strengths. Thousand Oaks, CA Sage.

Taylor. S.E. 2006).Health Psychology.6th Edition.Flew DelhI: Tata M

Online E-resources

1. **https://www.ahajournals.org/doi/10.1161/CIR.0000000000000947**
2. **https://iaap-journals.onlinelibrary.wiley.com/journal/17580854**
3. **BPCG-173 Psychology for Health and Wellbeing - https://egyankosh.ac.in/handle/123456789/73140**
4. **Health Psychology Promotes Wellness - https://www.apa.org/education-career/guide/subfields/health**

Course Articulation Matrix - 21OEPSY101

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	-	-	1	-	1	1	3	-	1
CO 2	3	3	1	-	-	2	1	-	1	3	-	2
CO 3	3	2	1	-	1	3	1	1	1	3	-	2
CO 4	3	2	1	-	1	3	1	1	1	3	-	2
Weighted Average	**3**	**2.2**	**1**	**0**	**1**	**2.2**	**1**	**1**	**1**	**3**	**0**	**1.75**

OE (1) Syllabus of Psychology (Except B.A Streams)

Semester I

Course Code: 21OEPSY102	**Course Title O.E (1) : Life Skills - I**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2:30 Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1 – Describe the basics and conceptual features of Life skills.
CO2- Comprehend the basic framework of Self-awareness and empathy understanding their association.
CO3 - Determine and classify the nature and relevance of Critical and Creative Thinking in Life Skills.
CO4 – Describe and analyze the dynamics of Decision making and Problem Solving.

Course Content

Content	Hours
UNIT – 1 Overview of Life Skills	
● Meaning and significance of life skills ● Life skills identified by WHO: Self-awareness, Empathy, Critical thinking, Creative thinking, Decision making, problem solving, Effective communication, interpersonal relationship, coping with stress, coping with emotion ● Use of Life skills in personal and professional life ● Life Skills Training – Models-4 H, ● Life Skills Education in the Indian Context.	**11 Hrs**
UNIT – 2 Self-awareness and empathy	
● Definition and need for self-awareness and empathy; ● Self-esteem and self-concept ● Human Values, tools and techniques of Self-awareness and empathy Activities: Johari window and SWOC analysis, Journaling, reflective questions, meditation, mindfulness, psychometric tests and feedback.	**11 Hrs**
UNIT – 3 Critical and creative Thinking	
● Definition and need for Creativity and Critical Thinking ● Need for Creativity in the 21st century, Imagination, Intuition, Experience and Sources of Creativity ● Lateral Thinking	**10 Hrs**

• Critical thinking Vs Creative thinking, Convergent & Divergent Thinking. • Activities: Fish Bowl, Debates, 9 dots puzzle, Circles of possibilities, Best out of waste, Socratic seminars, Group discussion, brain storming and lateral thinking exercises.	
UNIT – 4 **Decision Making and Problem Solving**	
• Definition of decision making and problem solving • Steps in problem solving: Problem Solving Techniques • Analytical Thinking, Numeric, symbolic, and graphic reasoning. Scientific temperament and Logical thinking • Activities: Six Thinking Hats, Mind Mapping, Forced Connections, A shrinking vessel, reverse pyramid.	**10 Hrs**

References:

- Barun K. Mitra, "Personality Development & Soft Skills", Oxford Publishers, Third impression, 2017.
- ICT Academy of Kerala, "Life Skills for Engineers", McGraw Hill Education (India) Private Ltd., 2016.
- Caruso, D. R. and Salovey P, "The Emotionally Intelligent Manager: How to Develop and Use the Four Key Emotional Skills of Leadership", John Wiley & Sons, 2004.
- Kalyana, "Soft Skill for Managers"; First Edition; Wiley Publishing Ltd, 2015.
- Larry James, "The First Book of Life Skills"; First Edition, Embassy Books, 2016.
- ShaliniVerma, "Development of Life Skills and Professional Practice"; First Edition; Sultan Chand (G/L) & Company, 2014.

Online E-resources

1. Basic Life Skills Curriculum – UNICEF https://www.unicef.org › azerbaijan › media › file

2. **Module 7 Life Skills – UNODC** - https://www.unodc.org › message › escap_peers_07

3. https://wachemo-elearning.net/courses/general-psychology/lessons/chapter-8introduction-to-life-skills

Course Articulation Matrix - 21OEPSY102

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	2	1	1	-	1	1	3	-	1
CO 2	3	3	-	3	1	1	1	-	2	3	-	1
CO 3	3	1	1	3	1	1	1	1	2	3	1	1
CO 4	3	1	1	3	1	1	1	1	1	3	1	1
Weighted Average	**3**	**1.7**	**0.7**	**2.8**	**1**	**1**	**0.7**	**0.7**	**1.5**	**3**	**0.5**	**1**

DSC (2) Syllabus for B.A Psychology (Basic and Honors)

Semester II

Course Code: 211265	**Course Title: Foundations of Psychology -II** DSC(2) (Theory) DSC(2) Psychology Lab (Practical)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2:30 Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 – Elucidate and analyze the construct of "Human Emotions"; and demonstrate the impact of Emotions on Behaviour.
CO2 – Describe the concept of Motivation and comprehend its relevance to human behavior.
CO3 – Demonstrate the structure of "Human Intelligence" and analyze its relevance to human life as an active cognitive process.
CO4 – Interpret Cognition, systematically analyze and comprehend the features of "Thinking-Reasoning".
CO5 – Conceptualize the dynamics of Human Personality and determine its significance to behaviour.

Course Content

Content	Hours
UNIT – 1 EMOTIONS	
• Definition, Elements of Emotions - physiological, behavioural, psychological and cognitive. • Classification of emotions- primary and secondary. • Theories of emotions- Physiological and Cognitive. • Emotional Intelligence- Meaning, definition, components. Application of emotional intelligence.	**12 Hrs**
UNIT – 2 MOTIVATION	
• Definition, Basic Concepts of Motivation - Instincts, needs, drives, incentives, Motivational cycle. • Approaches to the Study of Motivation: S – R approach (Behavioural), Cognitive and Humanistic. • Biological Motives: Hunger, thirst, sleep and sex. • Social Motives: Achievement, affiliation, approval.	**10 Hrs**

UNIT – 3	INTELLIGENCE	
	• Definition of intelligence, Nature and characteristics of intelligence. • Types- Social, Emotional, Multiple, Crystallized and Fluid Intelligence. • Theories of Intelligence- Thurstone's, Spearman's, Guillford's and Gardener. • The concept of intelligence quotient. Assessment of intelligence- Tests of intelligence. • Artificial Intelligence.	**10 Hrs**
UNIT – 4	**THINKING AND REASONING**	
	• Introduction to cognition – Definition of Thinking, Elements of Thinking. • Concept Formation: Importance and process of concept formation • Types of Thinking - Creative and critical thinking, Convergent & Divergent Thinking, Altruistic and Realistic Thinking. • Problem Solving: Meaning, Process of Problem Solving and obstacles • Reasoning – Inductive and Deductive, decision making.	**12 Hrs**
UNIT – 5	**PERSONALITY**	
	• Definition & Determinants of Personality. • Theories of personality- Type and Trait, Psychodynamic, Behavioural and Humanistic. • Assessment of personality- Rating scales, Questionnaires and Projective techniques.	**12 Hrs**

Reference:

1.) Baron, R. A. (2014).Psychology. (5th ed.). Delhi: PHI Learning Pvt. Ltd.

2.) Feldman, R. S. (2018). Understanding Psychology (14th ed.). New York: McGraw Hill Hergenhahn, B. R., & Henley, T. (2013). An Introduction to the history of psychology.Cengage Learning.

3.) Hilgard, E. R., Atkinson, R. C. & Atkinson, R. L. (2015).Introduction to psychology. (16th ed.). Boston: Cengage Learning.

4.) Malim, T. (2017). Introductory Psychology.Macmillan International Higher Education. Morgan, C. T.,

5.) King, R. A., Weisz, J. R., &Schopler, J. (2001).Introduction to psychology. (7th ed.) Chennai: McGraw-Hill Education (India) Pvt. L

Online / E-sources

1.) Introduction to Psychology - Open Textbook Library (umn.edu)

2.) American Psychological Association (APA)

3.) Beginning Psychology (lardbucket.org)

4.) Psychology (d3bxy9euw4e147.cloudfront.net)

5.) https://youtu.be/RGdK67Z0A00 - The Science of Personality

SEMESTER II

(DSE) Practical

PRACTICALS DSE - 211265

Course duration: 14 weeks with 4 hours of lab work per week amounting to 2 credits.
PRACTICALS DSC - Foundations of Psychology – II

Any 6 of the following experiments

(Selecting at least 1 from each of the given clusters and the 6th Experiment to be chosen from anyone of the given clusters)

4 hours per week. **Maximum Marks: 50**

1.) Emotions:
   a. Emotional intelligence scale/ questionnaire
   b. Oxford happiness scale

2.) Motivation
   a. Achievement motivation
   b. Guidance need inventory

3.) Intelligence
   a. Standard progressive matrices
   b. SFB (Seguin Form Board)

4.) Thinking and reasoning
   a. Stroop effect
   b. Problem solving ability test based on Tower of London test

5.) Personality:
   a. Eyescenk's personality inventory
   b. NEO Personality Inventory

Statistics: Measures of Variance (Grouped and Ungrouped)

- Standard Deviation

Course Articulation Matrix - 211265

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	2	3	3	1	2	2	3	-	2
CO 2	3	2	1	2	3	2	-	-	-	3	-	2
CO 3	3	3	1	2	3	2	1	2	2	3	-	2
CO 4	3	3	2	2	3	3	1	1	1	3	-	2
CO 5	3	2	1	2	3	3	-	1	1	3	-	2
Weighted Average	**3**	**2.4**	**1.2**	**2**	**3**	**2.6**	**1**	**1.5**	**1.5**	**3**	**0**	**2**

OE (2) Syllabus of Psychology (Except B.A Streams)

Semester II

Course Code: 21OEPSY201	**Course Title O.E (2): Youth, Gender & Identity**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2:30 Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1 – Conceptualize the concept of Youth and determine the dynamics involved in Identity Formation.
CO2 – Elucidate and describe the attributes, conflicts and challenges to identity formation in youth.
CO3 – Demonstrate and analyze the complexities associated with Youth, Gender and Identity Crisis.
CO4 – Describe and critique the laws associated with Youth.

Course Content

Content	Hours
UNIT – 1 Introduction	
a. Concepts of Youth: Transition to Adulthood, Extended Youth in the Indian context b. Concepts of Gender: Sex, Gender Identity, Sexual Orientation and Issues c. Gender and Identity - Gender Roles, Gender Role Attitudes, Gender Stereotypes, Gender discrimination d. Concepts of Identity: Multiple identities.	**11 Hrs**
UNIT – 2 Youth and Identity	
a. Family: Parent-youth conflict, sibling relationships, intergenerational gap b. Peer group identity: Friendships and Romantic relationships c. Workplace identity and relationships d. Youth culture: Influence of globalization on Youth identity and Identity crisis	**11 Hrs**
UNIT – 3 Issues related to Youth, Gender and Identity	
a. Youth, Gender and violence b. Enhancing work-life balance c. Changing roles and women empowerment d. Encouraging non-gender stereotyped attitudes in youth.	**10 Hrs**

UNIT – 4	Law and Youth	
a. Juvenile Justice act b. LGBT rights in India c. UNICEF programs for youth		**10 Hrs**

References:

Carr. A. (2004) Positive Psychology: The science of happiness and human strength UK: Routledge.

DiMatteo, M.R &. Martin, L.R.(2002). Health Psychology. New Delhi: Pearson.

Farshaw, M 2DD3) Advanced PsychoIo9Y: Health Psychology. London:Hodder and Stoughton

Forshaw, M. (2003).Advanced Psychology: Health Psychology. London: Hodder and Stou9htan.

Hick.J.W. (2005).Fifty signs of Mental Health.A Guide to understanding mental health.Yale University Press.

Snyder, C R., & Lopez. S.J.(2007) Positive Psychology: The scientific and practical explorations of human strengths. Thousand Oaks, CA Sage.

Taylor. S.E. 2006).Health Psychology.6th Edition.Flew DelhI: Tata M

Online E-resources

1. Youth Psychology :Concept of Youth and Youth across cultures-https://www.docsity.com › youth-psychology-concept
2. Psychology of Youth - https://www.idymop.org/post/psychology-of-youth
3. Positive youth Development & Wellbeing: Gender Differences - https://www.frontiersin.org/articles/10.3389/fpsyg.2021.641647/full

Course Articulation Matrix - 21OEPSY201

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	-	-	1	-	1	1	3	-	1
CO 2	3	3	-	-	-	1	1	-	1	3	-	1
CO 3	3	1	1	-	1	1	1	1	1	3	-	1
CO 4	3	1	1	-	1	1	1	1	1	3	-	1
Weighted Average	**3**	**1.75**	**1**	**0**	**1**	**1**	**1**	**1**	**1**	**3**	**0**	**1**

OE (2) Syllabus of Psychology (Except B.A Streams)

Semester II

Course Code: 21OEPSY202	**Course Title O.E (2): Life Skills – II**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2:30 Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1 – Identify the nature of Effective Communication and comprehend the skills necessary for effective communication.
CO2 – Elucidate the dynamics involved in Interpersonal Relationships and interpret the techniques of enhancing Interpersonal skills.
CO3 – Demonstrate effective Stress management and analyze stress coping skills.
CO4 – Synthesize the dynamics of a Group or Team, comprehending the techniques to resolve conflict and enhance group performance.

Course Content

Content	Hours
UNIT – 1 Effective Communication	
• Effective communication and Presentation skills. • Verbal and nonverbal communication, types of barriers • Writing Skills: Activities: Letter Writing, Job Application, Resume writing. • Listening Skills: Activities : Listen and Draw , Blindfold walk • Activities : Interview Skills, Group Discussion, Presentation Skills, stand up for fillers, Just A Minute	**11 Hrs**
UNIT – 2 Interpersonal Relationship	
• Meaning and benefits of Interpersonal skills • Components of Interpersonal skills, • Techniques of improving Interpersonal skills, • Activities: Role play, Ice breakers, circle time discussions, group discussion, two truths and a lie and SWOC analysis of peer	**11 Hrs**

UNIT – 3 Coping with Stress and emotions	
• Stress Management: Stress, reasons and effects • Identifying stress, the four A's of stress management • Identifying and managing emotions, harmful ways of dealing with emotions • Activities : Stress Dairies, PATH method and relaxation techniques, Zen / Mandala drawing, creating Joy Collage, Gratitude Journaling, Eye Contact games	**10 Hrs**
UNIT – 4 Group and Team Dynamics	
• Introduction to Groups: Composition, formation, expectations, Problem Solving, Consensus, Dynamics techniques, • Group vs Team, Team Dynamics, • Managing team performance and managing conflicts • Activities : Chinese Puzzle, Use what you have game ,Group timeline, Do the Math : Cooperation and competition in groups, Barter Puzzle.	**10 Hrs**

References:

- Barun K. Mitra, "Personality Development & Soft Skills", Oxford Publishers, Third impression, 2017.
- ICT Academy of Kerala, "Life Skills for Engineers", McGraw Hill Education (India) Private Ltd., 2016.
- Caruso, D. R. and Salovey P, "The Emotionally Intelligent Manager: How to Develop and Use the Four Key Emotional Skills of Leadership", John Wiley & Sons, 2004.
- Kalyana, "Soft Skill for Managers"; First Edition; Wiley Publishing Ltd, 2015.
- Larry James, "The First Book of Life Skills"; First Edition, Embassy Books, 2016.
- ShaliniVerma, "Development of Life Skills and Professional Practice"; First Edition; Sultan Chand (G/L) & Company, 2014.

Online E-resources

1. https://www.tutorialspoint.com/effective_communication/effective_communication_tutorial.pdf1.
2. .https://www.tutorialspoint.com/interpersonal_skills/interpersonal_skills_tutorial.pdf
3. **Module 7 Life Skills – UNODC** - https://www.unodc.org › message › escap_peers_07

Course Articulation Matrix - 21OEPSY202

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	-	-	1	-	1	1	3	-	1
CO 2	3	3	-	-	-	1	1	-	1	3	-	1
CO 3	3	1	1	-	1	1	1	1	1	3	-	1

CO 4	3	1	1	-	1	1	1	1	1	3	-	1
Weighted Average	**3**	**1.75**	**1**	**0**	**1**	**1**	**1**	**1**	**1**	**3**	**0**	**1**

Continuous Formative Evaluation/Internal Assessment (DSC & OE)

Total marks for each course shall be based on continuous assessments and semester end examinations. Thepattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and SemesterEnd Practical Examinations respectively.

	THEORY	**PRACTICAL**
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar,case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment andscore process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks forthe final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of thecase and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the

concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a courseshall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance, the marks are 25 (10 + 15) and 25. Evaluated for a total of 50 Marks.
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decidedby the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study/Assignment etc., the students should be informed aboutthe modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall beobtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE (Controller of Examination) at least 10 days before the commencementof the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected

the result, shall retain the internal assessment marks.

PRACTICAL COMPONENT

Scheme of Valuation for I & II Sem: Practical Experimentation

C1 and C2 (Practical) are internal tests to be conducted during 8th and 16th weeks of the semester respectively. C3 (Practical Examination) is conducted during the end of the semester for the duration of 3 hours. The students are assessed and evaluated by the External and Internal Examiners - on various skills associated with Psychology Practical – Administration, Procedure, Instructions, Analysis and Interpretation of results of the Subjects performance in the Experiment conducted. The Practical Component is valuated for 50 Marks (during each of the Semesters respectively).

The C1(Test) and C2 (Assignment – Case Study) components are - IA assessment. During the C1 and C2 elements the student is evaluated for 20 marks (collectively) as per the following scheme:
a.) C1 – Test on Experiments - 10 marks (On first Half of the Practical Portions)
b.) C2 – Test on Experiments / Assignment/Case Study/Statistics - 15 marks (On the second Half of Practical Syllabus + Record)

Though the C1 and C2 components are evaluated for 20 marks each for the ease of calculation, however the total marks scored by the student are then normalized to 10 under each component, (C1 and C2 Collectively – 20 + 5 Marks for Practical Record).

Record - 5 Marks; the Practical record has to be evaluated on 5 marks (IA) and then certified by the Head of the Department.

- The student is evaluated for 25 marks during C3 Examination as per the following scheme:

Heading	Marks
Experiment	5
Conduction	5
Group Discussion	5
Viva Voce	5
Statistics	5
TOTAL	**25**

General Pattern on Psychology PRACTICAL Question Paper (NEP-2020)

Term End Examination for Discipline Specific Paper

Scheme of Valuation for I & II Sem: Practical Experimentation

Total marks = 50		
Internal assessment =25		
Content	Marks	
Test C1	10	
C2 Test/Assignment (Case Study/Reports/Seminar Presentations; Statistics etc) + Practical Record	10 05	Total 15
Total IA	**25**	
Practical examination =25		
Content	Marks	
Writing Plan and procedure (any one)	05	
Conduction / administration (any one)	05	
Discussion of results (any one)	05	
Statistics	05	
Viva voce	05	
Total Practical Examination	**25**	

Practical Exam Duration & Ordinance

- **The Exam duration for I.A Practicals (Test C1 component) is for 1 Hr and C3 the main Practical Examination is for 3 Hrs.**
- **The student is expected to reach the Examination venue 30 minutes before the schedule.**
- **If the student is delayed beyond 30 min of the given schedule of Practical Examination; then he/she is not entitled or allowed to write the Practical examination for that Semester and will be considered as absent.**

*** **Practical Record** - 5 Marks; Record submission is compulsory prior to the scheduled Examination date failing which the student is considered as not eligible to take up the Practical Examination. The student has to compulsorily submit the written Practical Record during C3 - Final Practical Examination. While, the student is considered as eligible for the C3 component of Psychology Practical Examination, only if the Practical record has been submitted by the student to be evaluated on 5 marks (IA) and then certified by the Head of the Department. In case of an

incomplete record the Department has every authority to either consider or penalize the student by deducting the marks for their negligence and lack of involvement.

DSC - Question Paper Pattern (Theory – I & II Sem)

PSYCHOLOGY B.A PROGRAMME

B.A PSYCHOLOGY - DSC (For I & II Semesters)

Time: 2:30 Hours **Max. Marks: 60**

Part-A

I. Answer any five of the following questions. **5x2=10**

1.)…….
2.)…….
3.)…….
4.)…….
5.)…….
6.)…….
7.)…….

Part-B

II. Answer any Four of the following questions. **4x5=20**

8.)……..
9.)……..
10.)……
11.)…….
12.)……
13.)……
14.)……

Part-C

III. Answer any Four of the following questions. **3x10=30**

15.)……
16.)……
17.)……
18.)……
19.)……
20.)……

O.E Psychology - Question Paper Pattern (Theory I & II Sem)

PSYCHOLOGY B.A PROGRAMME

B.A PSYCHOLOGY – O.E (For I & II Semesters)

Time: 2:30 Hours **Max. Marks: 60**

Part-A

I. Answer any five of the following questions. **5x2=10**

1.)……
2.)……
3.)……
4.)……
5.)……
6.)……
7.)……

Part-B

II. Answer any Four of the following questions. **4x5=20**

8.)……..
9.)……..
10.)……
11.)…….
12.)……
13.)……
14.)……

Part-C

III. Answer any Four of the following questions. **3x10=30**

15.)……
16.)……
17.)……
18.)……
19.)……
20.)……

Approved by the Board of Studies in Psychology (2022-2023) and forwarded to the Academic Council and the Governing Council for further reference and consent.

M. Sujata 12/9/2022

(Asst. Prof. Sujata. M)

Chairperson
BOS/BOE in Psychology
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(Dr.Rekha)

(Siyana Salim)

(ABSENT)

Mahajana Education Society (R.)
Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

DEPARTMENT OF PSYCHOLOGY

Motto: **Enriching scientific thought & Promoting Pro-Social Behavior.**

Vision: **Thriving towards a scientifically driven environment for the development of Psychological literacy.**

Mission: **Enabling the 'Learner' to develop the Research attitude and explore new dimensions in Behavioral Sciences.**

Programme Outcomes (PO,s) - "Bachelors of Arts"	
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

OBJECTIVES: Psychology

1.) **Promote higher learning and research orientation among students, through effective establishment of the interface between the field of Psychology and its empirical nature.**

2.) **Establish Introspective approach through – Educational tours, Internship Programmes, Minor Projects ect; to gear-up the Learner to explore the dynamics of Applied Psychology.**

3.) **Kindle "Self – Enhancing and Innovative" skills among students through broader insights into the realm of Psychology.**

4.) **Inspire Students to foresee various promising Career prospects available in the field of Mental Health Sciences through the pursuit of Psychology.**

5.) **Endow a sense of 'Professional Integrity' in the learner through realizing the significance of Psychology in facilitating Mental Health services.**

List Of BOS Members in Psychology

Sl.No.	Category	Name	Designation	Address for Communication	E-mail and Mobile No.
1.	HoD	Smt. Sujata. M	Asst. Professor & HoD	Dept. of Psychology SBRR Mahajana First Grade College, Mysore	Sujatam.fgc@mahajana.edu.in 9886191174
2.	Two Experts from Outside the parent University	1.) Dr Rekha	Associate Professor	Dept. of Psychology Govt. College for Women (Autonomous) Mandya.	rekhamsumesh@gmail.com 9986627024
		2.) Dr Archana Bhatt K	Associate Professor & HoD	UG & PG Dept. of Psychology Kateel Ashok Pai Memorial College – Shivamogga, Kuvempu University.	archana.kallahalla@gmail.com 9538298660
3.	Nominee by the Vice Chancellor	Dr. Mridula Singh	Associate Professor	Dept. of Psychology Maharajas College, Mysore.	mridulasingh15@gmail.com 9448312327
4.	One Person from Industry /Corporate Sector /Allied area	Dr. Lancy D'Souza	Professor & HoD,	Dept. of Psychology, Maharaja's College Mysore	lancyd@gmail.com
6.	Alumnus	Siyana Salim	P G Student M.Sc Clinical Psychology	Dept. of Clinical Psychology St. Agnes College Mangalore	ishasalim31@gmail.com 9071693910

Course Structure (NEP 2020)

Discipline Specific Courses (DSC) & Open Elective (OE)

III Sem Course Code - 221365	IV Sem Course Code - 221465

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		Marks
PSYCHOLOGY – III Sem									
DSC(3) - 221365 DSC (3) -Lab	Child Development	4	0	4:0:2	20	20	60	2: 30 Hours	150
	Psychology Practicals - 3	0	4		10	15	25	3 Hours	
OE (3) 22OEPSY301	Psychology and Mental Health	3	0	3:0:0	20	20	60	2: 30 Hours	100
PSYCHOLOGY – IV Sem									
DSC(4) - 221465 DSC(4) - Lab	Developmental Psychology	4	0	4:0:2	20	20	60	2: 30 Hours	150
	Psychology Practicals - 4	0	4		10	15	25	3 Hours	
OE (4) 22OEPSY401	Psychology at Work	3	0	3:0:0	20	20	60	2: 30 Hours	100

DSC (3) Syllabus for B.A PSYCHOLOGY (Basic and Honors)

Semester III

Course Code: 221365	**Course Title:** DSC(3) Child Development (Theory) DSC(3) Lab - Psychology (Practical)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2:30 Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 – Elucidate and analyze the nature of Human Lifespan Development across stages; with special relevance to Child Development.
CO2 – Identify and describe the nature of Pre-natal Development in humans; further conceptualize the dynamics involved in the phase.
CO3 – Demonstrate the pattern of growth and maturation in different domains of development across Infancy and Childhood.
CO4 – Systematically analyze and comprehend the Socio-emotional and Moral development through Infancy and Childhood.
CO5 – Determine and deconstruct the nature, symptomatology and pattern of Developmental disorders.

Course Content

Content	Hours
UNIT – 1 **INTRODUCTION**	
a)Development – Meaning & Nature – Heredity and Environment. **b)Theories of child development** – Cognitive theories, Behavioral and socio-cognitive theories; Ecological model – Bronfenbrenner. **c)Methods and Designs** – Longitudinal, Cross – sectional, Sequential, Correlation. **d)Application of Child Psychology.**	**12 Hrs**
UNIT – 2 PRE-NATAL DEVELOPMENT	
a) Stages in prenatal development – Conception, Germinal stage, Embryonic stage and Fetal stage. **b)** Hazards- Environmental (Pollutants, Teratogens and Psychoactive drug, Infectious Diseases) and Incompatible Blood types. **c) Child birth** – Stages of child birth, Complications of child birth- Water Breaking Early, Perinatal Asphyxia, LBW (Low Birth Weight), Breech, Excessive bleeding, Umbilical cord issues.	**10 Hrs**

d) New Born Assessment – APGAR scale, Brazelton Neonatal Behavioural Assessment Scale. **e) Chromosomal and Gene linked abnormalities** – Chromosomal abnormalities - Down Syndrome; Abnormalities of the sex chromosomes - Kleinfelters, Fragile x, Turner's, XXX, XYY; Gene linked abnormalities - PKU, Sickle Cell Anaemia, Tay Sachs Disease.	
UNIT – 3 PHYSICAL, COGNITIVE AND LANGUAGE DEVELOPMENT (Infancy, Babyhood & Childhood)	
a) MOTOR DEVELOPMENT: Meaning; Reflexes, Sequence of motor development – Gross motor development & fine motor development. **b) PERCEPTUAL DEVELOPMENT -** Touch, Taste and Smell, Hearing, Vision. **c) COGNITIVE DEVELOPMENT** - Piaget's theory of cognitive development., Vygotsky's Theory of cognitive Development- Zone of Proximal Development and Scaffolding. **d) LANGUAGE DEVELOPMENT** – Pre-linguistic development – receptivity to language, first speech sounds. Phonological development; Semantic development; Grammatical Development, Pragmatic development; Bilingualism.	**12 Hrs**
UNIT – 4 EMOTIONAL, SOCIAL AND MORAL DEVELOPMENT (Infancy, Babyhood & Childhood)	
a) EMOTIONAL DEVELOPMENT - Development of emotional expression, Basic Emotions, Self-Conscious Emotions, Emotional self-Regulation, Acquiring Emotional Display Rules. b) **SOCIAL DEVELOPMENT -** Social Orientation, Development of attachment, sense of security, Cultural Influences - Self Awareness and Self Understanding. **c) MORAL DEVELOPMENT -** Kohlberg's theory of Moral development.	**11 Hrs**
UNIT – 5 DISORDERS OF CHILDHOOD	
ADHD, Conduct disorder, Oppositional defiance disorder, Childhood depression, Symptom disorders (Eneuresis, encopresis, sleep walking and tics); Pervasive developmental disorders – Autism, Intellectual Disability.	**11 Hrs**

References:

1.Carson, Butcher and Mineka, (2008) Abnormal Psychology. 13th edition, Pearson Education

2. John.W.Santrok (2014) - Child Development - 13th edition, Tata McGraw hill edition

3. Laura E. Berk (2013) - Child Development- 9th Edition, Easter economy edition, PHI publication

4. Levine, L.E. & Munsch,J (2014) Child Development: An Active Learnung Appraoch, 2nd Edition, Sage Publications. Inc

5. Papalia,D.E., & Olds, S.W., ***Human Development*, 5th Ed., 7th Ed., 9th Ed.,** 1992, 1998, Mc Graw Hill Publication, New Delhi.

6. Hurlock, B. E., ***Developmental Psychology, A life- span approach*, 5th Ed**, Tata Mc Graw Hill, New Delhi.

7. Hoffman, l., *Developmental Psychology Today*, 5th Ed., 1988, Mc Graw Hill Publications, USA.

8. Santrock, J.W., Life- span Development, 7ed.,1999, Mc Graw Hill, North America.

9. Laura C Berk, ***Child Development***, 7th Ed., (2007), Pearson Publication.

10. S. Venkateshan, ***Children with Developmental Disabilities,*** (2004), Sage Publication, India.

11. Lally, Martha, and Suzanned Valentine-French. (2017). ***Lifespan development: a psychological perspective.***

12. Baltes, Paul & Lindenberger, Ulman & Staudinger, Ursula. (2006). Life Span Theory in Developmental Psychology.

Online / E-sources

1.) Duane F. Alwin, Linda A. Wray, A Life-Span Developmental Perspective on Social Status and Health, *The Journals of Gerontology: Series B*, Volume 60, Issue Special_Issue_2, 1 October 2005, Pages S7–S14, https://doi.org/10.1093/geronb/60.Special_Issue_2.S7

2.) Lally, Martha, and Suzanned Valentine-French. (2017). ***Lifespan development: a psychological perspective.*** https://open.umn.edu/opentextbooks/textbooks/540.

3.) Baltes, Paul & Lindenberger, Ulman & Staudinger, Ursula. (2006). Life Span Theory in Developmental Psychology. 10.1002/9780470147658.chpsy0111.

4.) Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span development. *Psychological review*, *117*(1), 32–60. https://doi.org/10.1037/a0017668

5.) Susan Krauss Whitbourne, PhD, University of Massachusetts, Amherst. (2012) LIFE SPAN DEVELOPMENT - a six-unit content developed by the American Psychological Association, December 2012 **https://www.apa.org/ed/precollege/topss/lessons/life-development.pdf**

BA/BSc III Semester With effect from Academic year 2022-23 and onwards

PRACTICALS: Total Hrs of Teaching 56 Hrs - 4 **hours per week.**

IA – 25 Marks **Semester End Exam – 25 Marks**

Maximum Marks: 50 (Minimum 6 Practical to be conducted)

1. Children's Self Concept Scale / Any Self-concept Rating Scale
2. Learning Styles Inventory
3. Three-Dimensional Parental Behaviour Inventory
4. Vineland Social Maturity Scale
5. Shyness Assessment Test for children
6. General Health Questionnaire
7. Emotional Maturity Scale
8. Family Environment Scale

STATISTICS

Correlation

- Spearman's Rank Difference Method
- Pearson's Product Moment

Course Articulation Matrix - 221365

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	3	3	3	2	1	1	3	-	3
CO 2	3	3	1	1	3	2		-	-	2	-	1
CO 3	3	3	1	1	3	2	-	-	-	2	-	1
CO 4	3	3	1	1	3	3	-	1	-	2	-	1
CO 5	3	3	2	2	3	3	1	1	1	3	-	2
Weighted Average	**3**	**2.8**	**1.2**	**1.6**	**3**	**2.6**	**1.5**	**1**	**1**	**2.4**	**0**	**1.6**

OE (3) Syllabus of Psychology (Except for B.A Streams)

Semester III

Course Code: 22OEPSY301	**Course Title (O.E): Psychology and Mental Health**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2:30 Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1 – Analyze and describe the spectrum of Mental Health through its fundamentals.
CO2 - Conceptualize and reflect upon various approaches to Mental Health stressors and determine the coping strategies.
CO3 - Identify and introspect the nature, symptoms and impact of emerging Mental Health issues on overall Mental Health.
CO4 – Synthesize and determine various Intervention strategies to manage Mental illness and enhance Mental Health wellbeing.

Course Content

Content	Hours
UNIT – 1 Introduction	
a. Meaning and definition of Mental Health, Fundamentals of Mental Health. b. Factors affecting mental health: Physiological factors, Psychological factors and Social factors, c. Ethical issues	**11 Hrs**
UNIT – 2 Interpersonal approach to Mental Health	
a. Interpersonal approaches to mental health: communication and conflict – Non-violence communication, the four horsemen of the apocalypse. **b.** Cognitive distortions - personalization, catastrophizing, polarised thinking, shoulds and musts, mental filtering, fallacies (control, change, and heaven's reward), A-B-C model	**11 Hrs**

UNIT – 3 **Mental Health issues**	
a. Stress / Burnout b. Anxiety, fear, worry, phobia, depression c. Grief and trauma	**10 Hrs**
UNIT – 4 **Intervention and Management**	
a. Need for mental health intervention and strategies b. Coping Mechanisms: Grounding techniques, Mindfulness practices, Positive Management of emotions, Healthy Psychological and Social functioning (flourishing), Self care in mental health: A conceptual model.	**10 Hrs**

References

- Augustus, J.o., Bold, Justine., Williams, B. An Introduction to Mental Health, Sage Publications Ltd
- Gurumani, G.D., *Text Book of Mental Health and Hygiene*
- Lucock, M., Gillard, S., Adams, K., Simons, L., White, R., & Edwards, C. (2011). *Self - care in mental health services: a narrative review. Health & Social Care in the Community*, 19 (6)
- Papalia., &, C. D.E., Olds, S.W., & Feldmam, R.D. (2004). *Human Development*. 9th Edition. New Delhi: Tata Mc-Graw Hill Publishing Company Ltd.
- Piotrowski, N.A. (2010). *Psychology & Mental Health*. Salem Press.
- Robert Feldman (2011) *Essentials of Understanding Psychology* 10th Edition

Online/E-Resources

www.ipi.org.in/texts/ajit/dalal-psychology-of-health.pdf

- **https://egyankosh.ac.in › handle BPCG-173 Psychology for Health and Well being – eGyanKosh**
- Well-Being Concepts | HRQOL | CDC
- Psychological Health, Well-Being, and the Mind-Heart-Body Connection: A Scientific Statement From the American Heart Association | Circulation (ahajournals.org)

Course Articulation Matrix - **22OEPSY301**

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	-	-	1	1	1	-	3	-	2
CO 2	3	3	1	-	-	1	1	1	1	3	-	2
CO 3	3	2	1	-	1	2	1	1	1	3	-	2
CO 4	3	2	1	1	2	2	1	1	-	3	-	2
Weighted Average	**3**	**2.2**	**1**	**0**	**1.5**	**1.5**	**1**	**1**	**1**	**3**	**0**	**2**

DSC (4) Syllabus for B.A Psychology (Basic and Honors)

Semester IV

Course Code: 221465	**Course Title: Developmental Psychology** DSC(4) (Theory) DSC(4) Psychology Lab (Practical)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2:30 Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 – Enumerate the characteristics and illustrate the critical nature of Puberty and Adolescence stages of human development.
CO2 – Concretely analyze the dynamics and changes involved in Early Adulthood.
CO3 – Describe the nature of Middle Adulthood and deduce the complexities that center the stage.
CO4 – Demonstrate and conceptualize the attributes and challenges of Late Adulthood.
CO5 – Comprehensively determine the aspects of senility and the progress of life towards cessation.

Course Content

Content	Hours
UNIT – 1 PUBERTY & ADOLESCENCE	
a) Definition – Puberty and Adolescence. **b) Biological & Physical changes:** Sexual maturation in girls and boys - growth spurt, primary and secondary sexual characteristics, Physical Health issues. **c) Psychological changes and Mental Health** Issues during Adolescence. **d) Identity formation** - Gender identity and crisis, and Self- concept. **e) 'New media':** Influence on Adolescent behavior - Addiction to Social Media, Virtual Gaming, Antisocial tendencies and Juvenile Delinquency.	**12 Hrs**

UNIT – 2 **EARLY ADULTHOOD**	
a) Early adulthood – Definition & Adjustment. **b) Health and Physical Development:** Health and Fitness during Early Adulthood. **c) Psycho-social development**: Single Lifestyle, Intimate Relationships - Marriage (Types of Marriage), Divorce (Reasons and Impact), co-habitation, LGBTQA+ issues; Responsible Parenthood, and Infertility (Causes).Work – choosing an occupation and importance of work. **d) Cognitive development** – Schaie's Model.	**10 Hrs**

UNIT – 3 **MIDDLE ADULTHOOD**	
a) Definition and Adjustment during Middle Adulthood. **b) Physical changes** – Changes in appearance, sensory abilities, physiological functioning, Changes in Sexuality and Health issues. **c) Cognitive Development -** Integrative thought, Practical problem solving and creativity. **d) Psycho-social Changes** – Midlife Crisis, Vocational Hazards - Occupational stress, burnout, unemployment and retirement; Changes in Relationships - Maturing children and Aging Parents.	**10 Hrs**
UNIT – 4 **LATE ADULTHOOD**	
a) Physical Changes: Sensory & Psychomotor Functioning – Vision, Hearing, Taste & Smell, Strength, Endurance, Balance &Reaction time. **b) Psychosocial Development** - Life Style Changes and Social Issues related to aging (Successful retirement, Loss of Spouse and Empty Nest Syndrome). **c) Health concerns** – Alzheimer's, Parkinson's, (Changes in cognitive abilities), and Psycho-physiological Illnesses (Diabetes Mellitus, Hyper-tension and Coronary Heart Diseases). **d)** Living arrangements for the elderly and Successful aging.	**12 Hrs**
UNIT – 5 **LATE ADULTHOOD (Old age)**	

a) **Spirituality and Wellbeing** in late adulthood. b) **Finding Meaning & purpose** - Life & Death c) **Death & Dying** - Facing death & Loss - Psychological Issues - Confronting one's death; Patterns of grieving (Kubler Ross stages of Dying or Grieving). d) **Issues related to Death** - Medical, Legal and Ethical e) **Care for the dying** – Palliative and Hospice Care.	**12 Hrs**

REFERENCES

1. Carson, Butcher and Mineka, (2008) Abnormal Psychology. 13th edition, Pearson Education
2. John.W.Santrok (2014) - Child Development - 13th edition, Tata McGraw hill edition
3. Laura E. Berk (2013) - Child Development- 9th Edition, Easter economy edition, PHI publication
4. Levine, L.E. & Munsch,J (2014) Child Development: An Active Learnung Appraoch, 2nd Edition, Sage Publications. Inc
5. Papalia,D.E., & Olds, S.W., ***Human Development*, 5th Ed., 7th Ed., 9th Ed.,** 1992, 1998, Mc Graw Hill Publication, New Delhi.
6. Hurlock, B. E., ***Developmental Psychology, A life- span approach*, 5th Ed**, Tata Mc Graw Hill, New Delhi.
7. Hoffman, l., *Developmental Psychology Today*, 5th Ed., 1988, Mc Graw Hill Publications, USA.
8. Santrock, J.W., Life- span Development, 7ed.,1999, Mc Graw Hill, North America.
9. Lally, Martha, and Suzanned Valentine-French. (2017). ***Lifespan development: a psychological perspective*.**
10. Baltes, Paul & Lindenberger, Ulman & Staudinger, Ursula. (2006). Life Span Theory in Developmental Psychology.

Online / E-sources

1.) Duane F. Alwin, Linda A. Wray, A Life-Span Developmental Perspective on Social Status and Health, *The Journals of Gerontology: Series B*, Volume 60, Issue Special_Issue_2, 1 October 2005, Pages S7–S14, https://doi.org/10.1093/geronb/60.Special_Issue_2.S7

2.) Lally, Martha, and Suzanned Valentine-French. (2017). ***Lifespan development: a psychological perspective*.** https://open.umn.edu/opentextbooks/textbooks/540.

3.) Baltes, Paul & Lindenberger, Ulman & Staudinger, Ursula. (2006). Life Span Theory in Developmental Psychology. 10.1002/9780470147658.chpsy0111.

4.) Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span development. *Psychological review*, *117*(1), 32–60. https://doi.org/10.1037/a0017668

5.) Susan Krauss Whitbourne, PhD, University of Massachusetts, Amherst. (2012) LIFE SPAN DEVELOPMENT - a six-unit content developed by the American Psychological Association, December 2012 https://www.apa.org/ed/precollege/topss/lessons/life-development.pdf

BA/BSc IV Semester With effect from Academic year 2022-23 and onwards

PRACTICALS: Total Hrs of Teaching 56 Hrs - 4 **hours per week.**

IA – 25 Marks **Semester End Exam – 25 Marks**

Maximum Marks: 50 (Minimum 6 Practical to be conducted)

1. College Student Problem Checklist
2. Life Satisfaction Scale
3. Social Intelligence Scale
4. Battle Ground Mobiles India - Addiction Test (PUBG addiction test)
5. Self Regulation Questionnaire
6. Social Adjustment scale for aged
7. Social Network Addiction Scale
8. Loneliness Inventory

STATISTICS

Tests of Difference

- 't' test
  - Independent Sample test
  - Paired Sample test

Course Articulation Matrix - 221465

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12

CO 1	3	2	1	3	3	3	1	1	1	3	-	3
CO 2	3	3	1	1	3	3	1	1	-	2	-	1
CO 3	3	3	1	1	3	2	1	1	-	2	-	1
CO 4	3	3	1	1	3	3	1	1	1	2	-	1
CO 5	3	3	2	2	3	3	1	1	1	3	-	2
Weighted Average	**3**	**2.4**	**1.2**	**2.6**	**3**	**2.8**	**1**	**1**	**1**	**2.4**	**0**	**1.6**

OE (4) Syllabus of B.A Psychology (Except B.A)

Semester IV

Course Code: 22OEPSY401	**Course Title O.E (4): Psychology at Work**
Course Credits: 03 (3:0:0)	**Hours of Teaching/Week:** 03 Hour (Theory)
Total Contact Hours: 42 Hours (Theory)	**Formative Assessment Marks:** 40
Exam Duration: 2:30 Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1 – Conceptualize the nature and scope of Industrial Psychology.
CO2 – Elucidate and describe the attributes and challenges involved in Performance Appraisal and Work Motivation.
CO3 – Demonstrate and interpret the determinants of Leadership and Communication in Work setup.
CO4 – Enumerate the nature and sources of stress; further comprehend the intervention strategies to cope with Stress.

Course Content

Content	Hours
UNIT – 1 Industrial / Organizational Psychology	
a) Nature and Meaning, Goals, Role of a psychologist in Industries and Organization. b) Challenges at workplace: Stress, Burnout, Absenteeism, Work environment,Alcoholism, Substance abuse, Conflicts.	**11 Hrs**
UNIT – 2 Performance Appraisal & Motivation	
a) Definitions and Need for Performance Appraisal. Methods: Objective Performance Appraisal - Output measures, Computerized performance monitoring, Job related personal data, Essay methods, Critical incident method and Checklist method. b) Judgmental Performance Appraisal - Merit rating techniques, Behaviour Anchored Rating Scale and Behaviour Observation Scale. c) Management by objectives (MBO) and 360* Feedback. d) Meaning of work motivation. Types-Financial and Non-Financial motives.	**11 Hrs**
UNIT – 3 Leadership & Communication	
a) Definition and Nature of leadership. Traits and skills of effective leader. Styles of Leadership - Authoritarian, Democratic, Transactional and Transformational leaders. b) Communication: Meaning and Importance, Verbal and Non verbal communication, Strategies of effective communication.	**10 Hrs**

UNIT – 4	Stress & Stress Management at Workplace	
a) Definition of Stress, Nature & Causes of Stress b) Techniques to Manage Stress: Physical Activity, Sport and Exercise, Yoga, Meditation, Relaxation Techuniques, Wellness Programme.		**10 Hrs**

References:

1. Girishbala Mohanty (2001) - Industrial Psychology and Organizational Behavior, Kalyani Publishers, Ludhiana.

2. John W. Newstrom (2007) - Organizational Behaviour- Human Behaviour at work- 12th Edi. Tata McGraw-Hill Publishing Co. Ltd. ND

3. Schultz D.P & Schultz E.S. (2006) - Psychology and Work Today. An Introducation to Industrial and Organizational Psychology. 8th Edi. Pearson Education, Inc and Dorling Kinderssley Publishing Inc.

Online/e-Resources-Recommended for Reading

https://www.apa.org › topics › workplace Psychology in the workplace

https://www.staffordglobal.org › articles-and-blogs › ps Applying Psychology in the Workplace or Organisation

https://www.staffordglobal.org › articles-and-blogs › ps... Applying Psychology in the Workplace or Organisation

Course Articulation Matrix - 22OEPSY401

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	-	1	1	-	1	1	3	-	1
CO 2	3	3	1	-	1	1	1	1	1	3	-	1
CO 3	3	3	1	-	1	1	1	1	1	3	-	1
CO 4	3	2	1	-	1	1	1	1	1	3	-	1
Weighted Average	**3**	**2.5**	**1**	**0**	**1**	**1**	**0.7**	**1**	**1**	**3**	**0**	**1**

Continuous Formative Evaluation/Internal Assessment (DSC & OE)

Total marks for each course shall be based on continuous assessments and semester end examinations. Thepattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and SemesterEnd Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance, the marks are 25 (10 + 15) and 25. Evaluated for a total of 50 Marks.

- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.

- The teachers concerned shall conduct test/seminar/case study/Assignment etc., the students should be informed aboutthe modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE (Controller of Examination) at least 10 days before the commencementof the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result, shall retain the internal assessment marks.

PRACTICAL COMPONENT

Scheme of Valuation for III & IV Sem: Practical Experimentation

C1 and C2 (Practical) are internal tests to be conducted during 8th and 16th weeks of the semester respectively. C3 (Practical Examination) is conducted during the end of the semester for the duration of 3 hours. The students are assessed and evaluated by the External and Internal Examiners - on various skills associated with Psychology Practical – Administration, Procedure, Instructions, Analysis and Interpretation of results of the Subjects performance in the Experiment conducted. The Practical Component is valuated for 50 Marks (during each of the Semesters respectively).

The C1(Test) and C2 (Assignment – Case Study) components are - IA assessment. During the C1 and C2 elements the student is evaluated for 20 marks (collectively) as per the following scheme:
a.) C1 – Test on Experiments - 10 marks (On first Half of the Practical Portions)
b.) C2 – Test on Experiments / Assignment/Case Study/Statistics - 15 marks (On the second Half of Practical Syllabus + Record)

Though the C1 and C2 components are evaluated for 20 marks each for the ease of calculation, however the total marks scored by the student are then normalized to 10 under each component, (C1 and C2 Collectively – 20 + 5 Marks for Practical Record).

Record - 5 Marks; the Practical record has to be evaluated on 5 marks (IA) and then certified by the Head of the Department.

- The student is evaluated for 25 marks during C3 Examination as per the following scheme:

Heading	Marks
Experiment	5
Conduction	5
Group Discussion	5
Viva Voce	5
Statistics	5
TOTAL	**25**

General Pattern on Psychology PRACTICAL Question Paper (NEP-2020)

Term End Examination for Discipline Specific Paper

Scheme of Valuation for III & IV Sem: Practical Experimentation

Total marks = 50		
Internal assessment =25		
Content	Marks	
Test C1	10	
C2 Test/Assignment (Case Study/Reports/Seminar Presentations; Statistics etc) + Practical Record	10 05	Total 15
Total IA	**25**	
Practical examination =25		
Content	Marks	
Writing Plan and procedure (any one)	05	
Conduction / administration (any one)	05	
Discussion of results (any one)	05	
Statistics	05	
Viva voce	05	
Total Practical Examination	**25**	

Practical Exam Duration & Ordinance

- **The Exam duration for I.A Practicals (Test C1 component) is for 1 Hr and C3 the main Practical Examination is for 3 Hrs.**
- **The student is expected to reach the Examination venue 30 minutes before the schedule.**
- **If the student is delayed beyond 30 min of the given schedule of Practical Examination; then he/she is not entitled or allowed to write the Practical examination for that Semester and will be considered as absent.**

*** **Practical Record** - 5 Marks; Record submission is compulsory prior to the scheduled Examination date failing which the student is considered as not eligible to take up the Practical Examination. The student has to compulsorily submit the written Practical Record during C3 - Final Practical Examination. While, the student is considered as eligible for the C3 component of Psychology Practical Examination, only if the Practical record has been submitted by the student to be evaluated on 5 marks (IA) and then certified by the Head of the Department. In case of an incomplete record the Department has every authority to either consider or penalize the student by deducting the marks for their negligence and lack of involvement.

DSC - Question Paper Pattern (Theory – III & IV Sem)

PSYCHOLOGY B.A PROGRAMME

B.A PSYCHOLOGY - DSC (For III & IV Semesters)

Time: 2:30 Hours **Max. Marks: 60**

Part-A

I. Answer any five of the following questions. **5x2=10**

1.)……
2.)……
3.)……
4.)……
5.)……
6.)……
7.)……

Part-B

II. Answer any Four of the following questions. **4x5=20**

8.)……..
9.)……..
10.)……
11.)……
12.)……
13.)……
14.)……

Part-C

III. Answer any Three of the following questions. **3x10=30**

15.)……
16.)……
17.)……
18.)……
19.)……
20.)……

O.E Psychology - Question Paper Pattern (Theory III & IV Sem)

PSYCHOLOGY B.A PROGRAMME

B.A PSYCHOLOGY – O.E (For III & IV Semesters)

Time: 2:30 Hours **Max. Marks: 60**

Part-A

I. Answer any five of the following questions. **5x2=10**

1.)……
2.)……
3.)……
4.)……
5.)……
6.)……
7.)……

Part-B

II. Answer any Four of the following questions. **4x5=20**

8.)……..
9.)……..
10.)……
11.)…….
12.)……
13.)……
14.)……

Part-C

III. Answer any Four of the following questions. **3x10=30**

15.)……
16.)……
17.)……
18.)……
19.)……
20.)……

Approved by the Board of Studies in Psychology (2022-2023) and forwarded to the Academic Council and the Governing Council for further reference and consent.

M. Sujata 12/9/2022

(Asst. Prof. Sujata. M)

Chairperson
BOS/BOE in Psychology
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(Dr. Archana Bhatt K)

Archana Bhat K
Department of Psychology
Kuvempu Ashok Pai Memorial College
Shivamogga -577 201

(Dr.Rekha)

(Siyana Salim)

(ABSENT)

Mahajana Education Society (R.)
Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE
(Autonomous)

Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

DEPARTMENT OF PSYCHOLOGY

BOARD OF STUDIES (BoS)

UG ☑

PG ☐

NEP Syllabi for V and VI Semester - B.A Psychology

Autonomous 2023-24

Mahajana Education Society (R.)
Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

DEPARTMENT OF PSYCHOLOGY

Motto: Enriching scientific thought & Promoting Pro-Social Behavior.

Vision: Thriving towards a scientifically driven environment for the development of Psychological literacy.

Mission: Enabling the 'Learner' to develop the Research attitude and explore new dimensions in Behavioral Sciences.

Programme Outcomes (PO's) - "Bachelors of Arts"	
PO1	**Domain Knowledge:** Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.
PO2	**Problem Analysis:** This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.
PO3	**Design & Development of Solutions:** Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.
PO4	**Research & Investigation**: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.
PO5	**Usage of Modern Tools and Techniques:** Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.
PO6	**Social Sciences & Society –** Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.
PO7	**Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.
PO8	**Moral and Ethical Values:** Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.
PO9	**Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.
PO10	**Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.
PO11	**Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.
PO12	**Lifelong Learning**: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

OBJECTIVES: Psychology

1.) **Promote higher learning and research orientation among students, through effective establishment of the interface between the field of Psychology and its empirical nature.**

2.) **Establish Introspective approach through – Educational tours, Internship Programmes, Minor Projects ect; to gear-up the Learner to explore the dynamics of Applied Psychology.**

3.) **Kindle "Self – Enhancing and Innovative" skills among students through broader insights into the realm of Psychology.**

4.) **Inspire Students to foresee various promising Career prospects available in the field of Mental Health Sciences through the pursuit of Psychology.**

5.) **Endow a sense of 'Professional Integrity' in the learner through realizing the significance of Psychology in facilitating Mental Health services.**

List Of BOS Members in Psychology

Sl.No.	Category	Name	Designation	Address for Communication	E-mail and Mobile No.
1.	HoD	Smt. Sujata. M	Asst. Professor & HoD	Dept. of Psychology SBRR Mahajana First Grade College, Mysore	Sujatam.fgc@mahajana.edu.in 9886191174
2.	Two Experts from Outside the parent University	1.) Mr. Rithwik Kashyap	Asst. Professor	Dept. of Clinical Psychology JSS Medical College JSS University (Deemed) Mysore.	rithvikkashyap@gmail.com 9611314087
		2.) Dr Archana Bhatt K	Associate Professor & HoD	UG & PG Dept. of Psychology Kateel Ashok Pai Memorial College – Shivamogga, Kuvempu University.	archana.kallahalla@gmail.com 9538298660
3.	Nominee by the Vice Chancellor	Dr. Mridula Singh	Associate Professor	Dept. of Psychology Maharajas College, Mysore.	mridulasingh15@gmail.com 9448312327
4.	One Person from Industry /Corporate Sector /Allied	Dr. Lancy D'Souza	Professor & HoD,	Dept. of Psychology, Maharaja's College Mysore	lancyd@gmail.com
6.	Alumnus	Siyana Salim	P G Student M.Sc Clinical Psychology	Dept. of Clinical Psychology St. Agnes College Mangalore	ishasalim31@gmail.com 9071693910

Course Structure (NEP 2020)

Discipline Specific Courses (DSC)

Course Type & Code		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		Marks
PSYCHOLOGY - V Sem									
DSC(5) - 231565 DSC (5) -Lab	Health Psychology	4	0	4:0:2	20	20	60	2:30 Hours	150
	Psychology Practicum - I	0	4		10	15	25	3 Hours	
DSC(6) - 231566 DSC (6) -Lab	Social Psychology	4	0	4:0:2	20	20	60	2: 30 Hours	150
	Psychology Practicum - II (Research Project)	0	4		10	15	25	3 Hours	
PSYCHOLOGY – VI Sem									
DSC(7) - 231665 DSC(7) - Lab	Abnormal Psychology	4	0	4:0:2	20	20	60	2:30 Hours	150
	Psychology Practicum - I	0	4		10	15	25	3 Hours	
DSC(8) - 231666 DSC(8) - Lab	Organizational Psychology	4	0	4:0:2	20	20	60	2: 30 Hours	150
	Psychology Practicum - II	0	4		10	15	25	3 Hours	
SEC 23INTPSY01	Internship Programme (Optional)	0	4	0:0:2	10	15	25	3 Hours	50

DSC (3) Syllabus for B.A PSYCHOLOGY (Basic and Honors)

Course Code: 231565	**Course Title:** DSC(5) Health Psychology (Theory) DSC(5) Lab - Psychology (Practical)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 08 (Practical I & II)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2:30 Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1 – Elucidate the Concept of Health & Wellbeing and analyze the nature, significance, and subject matter of Health Psychology.
CO 2 – Determine and deconstruct the Health Enhancing and Compromising Behaviors.
CO 3 – Demonstrate the nature of Stress, comprehend its impact on the overall Health and introspect the coping strategies.
CO 4 – Identify and describe the nature of Pain, Correlates of Pain and Illness and reflect upon the Management of Pain & Illness.

Course Content

Content	Hours
UNIT – 1 INTRODUCTION TO HEALTH PSYCHOLOGY AND HEALTH BEHAVIOUR	
a) Health: Meaning and definition (WHO); Components of health: social, emotional, cognitive and physical aspects**.** Quality of life & Wellbeing. **b) Health Psychology**: Introduction & Significance of health psychology; Mind-Body relationship; Models of health -Biomedical and Bio psychosocial model. **c) Health Behaviours:** Factors influencing Poor health behaviours, Strategies to Optimize Health Behaviours.	**15 Hrs**

UNIT – 2 HEALTH ENHANCING AND COMPROMISING BEHAVIOUR	
a)Theories of Health behaviors: Health belief model and its implications. **b) Health compromising behaviors**: Lifestyle Issues, Abuse of Social Media, Substance abuse, & Unhealthy Dietary Practices, and Sleep Issues. **c) Health enhancing behaviours:** Physical Exercise, Balanced Diet, Sleep hygiene & Balancing Mental Health. **d) Adherence:** Meaning and factors influencing adherence.	**15 Hrs**
UNIT – 3 STRESS AND HEALTH	
a) Stress: Definition, Nature and sources of stress; Selyes' Model, GAS Model and Diathesis Model of Stress. **b) Effects of stress on Health:** Stress and immune system, Role of stress in CVD, Mental Health, & Diabetes. **c) Stress & Coping -** Meaning & Coping Styles **d) Stress Management** – Lifestyle Modification, Yoga & Meditation, Relaxation therapy, Mindfulness Practices, Expressive Therapies -music, art and dance.	**15 Hrs**
Chapter IV UNDERSTANDING OF PAIN, CHRONIC AND TERMINAL ILLNESS	
a) Psychology of Pain- Meaning & Types; Issues related to Chronic Pain, individual differences and Cognitive Behavioural Perspective of Pain. **b) Psychological aspects of chronic and terminal Illness** - Emotional responses to illness- Diagnosis & Treatment; Coping with illness – Emotional, Interpersonal & Psychological; Death Anxiety. **c) Palliative Care** – Meaning & Methods ; Role of Family & Support groups.	**15 Hrs**

References:

Books for Reference

1.) Taylor, S.E. (2010). Health psychology. 6th Ed, New Delhi: Tata McGraw Hill

2.) Marks. D .F .,Murry.M., Evans.B and Estacio.E.V (2011), Health psychology: Theory, research and practice (3rd edi), New Delhi: Sage publication India Pvt Ltd.

3.) Brannon.L & Feist. J (2007) Introduction to Health Psychology New Delhi: Thomson Learning Inc.

4.) DiMatteo, M.R. & Martin, L.R.(2002). Health psychology. New Delhi: Pearson.

5.) Ogden.J (2000) Health Psychology, 2nd edition Philadelphia, Open University press.

Online e-sources

1.) **Health Psychology Promotes Wellness**
https://www.apa.org/education-career/guide/subfields/health

2.) **BPCG-173 Psychology for Health and Wellbeing**
https://egyankosh.ac.in/handle/123456789/73140

3.) **Introduction to Health Psychology**
https://egyankosh.ac.in/handle/123456789/73143

4.) **Models of Health and Illness**
https://egyankosh.ac.in/bitstream/123456789/73144/1/Unit-2.pdf

5.) **Article on History of Health Psychology – Truth to be Told**
https://scottbarrykaufman.com/wp-content/uploads/2015/01/Froh-2004.pdf

Course Articulation Matrix – 221565

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	3	3	3	2	1	1	3	-	3
CO 2	3	3	1	1	3	2		-	-	2	1	1
CO 3	3	3	1	1	3	2	-	-	-	2	-	1
CO 4	3	3	1	1	3	3	-	1	-	2	1	1
Weighted Average	**3**	**2.7**	**1**	**1.5**	**3**	**2.5**	**0.5**	**0.5**	**0.25**	**2.25**	**0.5**	**1.5**

DSC (3) Syllabus for B.A PSYCHOLOGY (Basic and Honors)

Course Code: 231566	**Course Title:** DSC(6) Social Psychology (Theory) DSC(6) Lab - Psychology (Research Project)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 08 (Practical I & II)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2:30 Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO1 – Enumerate the nature and scope of Social Psychology and illustrate its significant impact on Individual Behaviour.
CO2 – Concretely analyze the dynamics involved in Social Processes and illuminate their interaction with the Social World.
CO3 – Comprehensively understand and determine the essence of Interpersonal Relationships on Individual Behaviour.
CO4 – Demonstrate and conceptualize the nature of Social Issues and deduce the complexities that centre the Social Behaviours.

Course Content

Content	Hours
UNIT – 1 Fundamentals of Social Psychology	
a) Social Psychology: Definition, Nature and Scope of social psychology. **b) Social perception:** Meaning, Non-verbal communication; impression formation and management. **c) Social Cognition:** Meaning, schemas, heuristics, and Stereotypes - Meaning & Types, Glass ceiling and Discrimination. d) **Perceiving Ourselves:** Self-concept, Self-Esteem, & Self-Presentation.	**15 Hrs**

UNIT – 2 Understanding And Evaluating the Social World	
a) Attribution: Meaning, Theories of attribution - Fritz-Heider's theory, Jones and Davis theory, Kelly's theory; Attributional Bias. **b) Attitudes:** Definition, attitude-behaviour link; Attitude - Formation and change. **c) Prejudice:** Meaning, Causes, and techniques to reduce Prejudice.	**15 Hrs**
UNIT – 3 Social Relations, Interaction and Influences	
a) Interdependent Relationship: Family, Friendship and Attachment style, Relationship problems, Effects of relationship failure. **b) Group Dynamics:** Meaning & Characteristics**, Group Processes -** Social facilitation, Social loafing, Group Think, Group Polarization, De-individuation, Co-operation, Conflict and techniques to resolve conflicts. **c) Pro-Social Behaviour**- Meaning, situational factors influencing pro-social behaviour. d) **Social Media** - Impact of social media on Interpersonal Relations.	**15 Hrs**
Unit – 4 Issues in Social Behaviours	
a) Aggression- Meaning, Theories - Social learning perspectives & Drive theory, Determinants of Aggression, Anger Management Strategies. **b) Violence** – Meaning, Nature and types of violence **–** Interpersonal Violence. Collective violence towards social change. **c) Anti-Social behaviour**- Meaning & Types, Psychosocial factors influencing Anti-Social Behaviours. d) **Applying social psychology to Social Systems** - Work & Family.	**15 Hrs**

References:

Books for Reference

1.) Baron, R.A., Byrne, D. &Bhardwaj, G. (2010).Social Psychology (12th Ed.). New Delhi: Pearson.

2.) Baron Robert and Byrne Donn (2004) Social Psychology, 10th Edition Pearson Education, Inc

3.) Misra, G. (2009).Psychology in India, Vol. 4: Theoretical and Methodological Developments (ICSSR Survey of Advances in Research).New Delhi: Pearson

4.) Myers David -Social Psychology (2006) -8th Edition, Tata McGraw Hill.

5.) Taylor, S.E., Peplau, L.A. & Sears, D.O. (2006).Social Psychology (12th Ed.).New Delhi: Pearson

Online e-sources

1.) **Introduction to Social Psychology**
https://opentext.wsu.edu/social-psychology/chapter/chapter-1/
2.) **Social Psychology**
https://niilmuniversity.in/coursepack/humanities/Social_Psychology.pdf
3.) **Introduction to Social Psychology**
https://www.egyankosh.ac.in/bitstream/123456789/54116/1/Block-1.pdf
4.) **History and principles of social psychology**
opentextbc.ca/socialpsychology/chapter/defining-social-psychology-history-and-principles/

Course Articulation Matrix – 221565

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	3	3	3	2	1	1	3	1	3
CO 2	3	3	2	2	3	2		-	-	2	1	1
CO 3	3	3	1	1	3	2	-	-	-	2	1	1
CO 4	3	3	2	2	3	3	-	1	-	2	1	1
Weighted Average	**3**	**2.7**	**1.5**	**2**	**3**	**2.5**	**0.5**	**0.5**	**0.25**	**2.25**	**1**	**1.5**

Health Psychology & Social Psychology (Practical) PSY C12-P

Practicum I - Experimentation

Practicum II – Research Project / Project Work

Practicum-I Experimentation (Minimum 06 Practical to be conducted)

1. Psychological Well-Being (Ryff C.D. et.al.2010)
2. Quality of Life Scale
3. Students Stress Rating Scale (Dr. Zaki Akhtar)
4. Type A and Type B - ABBPS (Upinder Dhar and Manish Jain)
5. Resilience Scale (Wagnild. G. M. and Young H.M)
6. Gratitude questionnaire (McCullough M.E, Emmons R.A, Tsang J 2002)
7. Mental Health Inventory
8. Optimum Health Scale (Pravin Kumar and Lovellen Bala)
9. Self-Concept Scale

STATISTICS: One way ANOVA - Independent or Uncorrelated Score

Practicum II – Research Project / Project Work

Course duration: 14 weeks with 4 hours of lab/field work per week amounting to 2 credits (60 Hrs)

This segment of the of **V Sem syllabus nurtures Research inclination** in students. The Student is expected to choose a specific topic from the given list of Topics approved by the HoD; within the realm of Psychology. The student is expected to conduct an empirical research study involving - Research Objectives & Questions; Formulation of Hypothesis, Review of literature; Developing a Research Design; Sampling, Selection of Tools; Data Collection, Statistical Analysis of data and Drawing conclusions. Towards the completion of research the student has to compile the Research Document and submit 2 copies of the same along with a CD uploaded with files of work done and the pile of datasheets collected from sample; documented report, under the supervision of the Subject teacher and the HoD. Further, the report will be evaluated and approved by the Head of the Department of Psychology provided it meets the expected standards of scientific work and this is mandatory to be eligible for the Practical Examination failing which the candidate shall be not allowed to Write the Practical Examination in the concerned Paper of Research Project.

DSC (3) Syllabus for B.A PSYCHOLOGY (Basic and Honors)

Course Code: 231665	**Course Title:** DSC(7) Abnormal Psychology (Theory) DSC(7) Lab - Psychology (Practical)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 08 (Practical I & II)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2:30 Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1 – Elucidate and analyze the construct of Normality & Abnormality to dispel myths regarding abnormality.
CO 2 – Describe and familiarize the criteria of Abnormality and the Classification Systems of psychological disorders.
CO 3 – Demonstrate the nature, Symptomology and etiology of various Psychological Disorders.
CO 4 – Conceptualize the essence of Personality Disorders in relevance Abnormality.

Course Content

Content	Hours
Unit 1 UNDERSTANDING ABNORMALITY	
Introduction: Meaning and definitions of abnormality, Criteria of abnormality; Models of abnormality - Psychodynamic, Behaviouristic, Cognitive, and Humanistic models. Classificatory Systems – DSM- 5(TR) and ICD-10.	**15 Hrs**
Unit 2 ANXIETY BASED DISORDERS	
Diagnostic criteria/ Clinical features, Causes & treatment: **a) Anxiety based disorders**: Meaning; Types - Phobic disorders; Obsessive Compulsive Disorders(OCD); Generalized Anxiety Disorder(GAD);	**15 Hrs**

b) Somatoform disorders - Somatoform Pain Disorder, Hypochondriasis (Illness Anxiety) ; conversion disorders. **c) Dissociative disorder** - Amnesia, fugue; Identity disorder	
Unit 3 SCHIZOPHRENIA AND MOOD DISORDERS	
Diagnostic criteria/ Clinical features, Causes & treatment: **a) Schizophrenia**: Meaning & Subtypes - Paranoid, Catatonia and Disorganized. **b**) Persistent **Delusional disorder: Meaning & Types – Grandiose, Persecutory and Infidelity** **c) Mood Disorders – Meaning & Subtypes - Depression, Mania and Bipolar Affective Disorders – I & II, Cyclothymia**	**15 Hrs**
Unit 4 PERSONALITY DISORDERS	
Diagnostic criteria/ Clinical features, Causes & treatment: **a)** Cluster A (paranoid, schizoid, antisocial), **b)** Cluster B (histrionic, narcissistic, antisocial and borderline) & Cluster C (avoidant and dependent personality disorder).	**15 Hrs**

References:

Books for Reference

1.) Carson R.C, Butcher JN and Mineka Susan (2005*)., Abnormal Psychology and modern life* (10th edn) New York: Harper-Collins

2.) Kaplan H, Sadock BJ, Grebb JA (1994) *Synopsis of Psychiatry* (7th edn). New Delhi: BL Waverly Pvt. Ltd.

3.) Sarason .I.G & Sarason R.B (2005) *Abnormal PsychologyThe Problems of Maladaptive Behaviour* 11th edition New Delhi Pearson Pub.

4.) Gerald C.Davison & John M.Neale, ***Abnormal Psychology,*** 2000, John Wiley & Sons, New York.S

5.) Alloy,Riskind,Manos, ***Abnormal psychology-current perspectives-ninth edition***-.

6.) Neale, Davidson,Hagga, ***Exploring Abnormal psychology-sixth edition***- -Wiley and sons.

7.) David Sue, Sue and Sue.-third edition ***Understanding abnormal behaviour***- Hougthon Miff

Online e-sources

1.) **Abnormal Psychology**

courses.lumenlearning.com/abnormalpsychology/

2.) **Understanding Abnormal Psychology**

www.verywellmind.com/what-is-abnormal-psychology-2794775

3.) **Abnormal Psychology – Discovering Psychology Series**

www.opentext.wsu.edu/abnormal-psych/wp-content/uploads/sites/41/2018/05/Abnormal-Psychology-2nd-Edition.pdf

4.) **Psychological Disorders**

www.spsrohini.com/sites/default/files/12 - Psychology - Psychological Disorders-Notes and Video link.pdf

5.) **Articles on Abnormal Psychology**

www.researchgate.net/publication/340536864_Abnormal_Psychology

Course Articulation Matrix – 231665

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	3	3	3	2	1	1	3	-	3
CO 2	3	3	1	1	3	2		-	-	2	1	1
CO 3	3	3	1	1	3	2	-	-	-	2	1	1
CO 4	3	3	1	1	3	3	-	1	-	2	-	1
Weighted Average	**3**	**2.7**	**1**	**1.5**	**3**	**2.5**	**0.5**	**0.5**	**0.25**	**2.25**	**0.5**	**1.5**

DSC (3) Syllabus for B.A PSYCHOLOGY (Basic and Honors)

Course Code: 231666	**Course Title:** DSC(8) Organizational Psychology (Theory) DSC(8) Lab - Psychology (Internship)
Course Credits: 06 (4:0:2)	**Hours of Teaching/Week:** 04 (Theory) + 08 (Practical I & II)
Total Contact Hours: 60 Hours (Theory) 60 Hours (Practical)	**Formative Assessment Marks:** 40 (Theory) 25 (Practical)
Exam Duration: 2:30 Hours (Theory) 3 Hours (Practical)	**Semester End Examination Marks:** 60 (Theory) 25 (Practical)

Course Outcomes (COs):

CO 1 – Articulate and conceptualize the fundamentals of Organizational Psychology and infer the basic concepts comprehensively.
CO 2 – Concretely relate and synthesize the basics of Individual differences and Job Stress.
CO 3 – Define, Integrate, and determine the nature and nexus of Organizational Perception and Learning.
CO 4 – Analyze and contrast the inherent characteristics of Organizational Structure and Culture.

Course Content

Content	Hours
Unit 1 INTRODUCTION TO ORGANIZATIONAL PSYCHOLOGY	
a) Nature, Importance and fundamental assumptions. Relevance of OB - Globalization, Technology and people's Changing Expectations. b) Organizational Justice: Nature and Strategies. c) Ethical Behaviour in Organizations: Nature, Meaning. Corporate ethics. & Corporate Social Responsibility -CSR.	**15 Hrs**

Unit 2 INDIVIDUAL DIFFERECES & JOB STRESS	
a) PERSONALITY: Nature and Measurement. Big Five dimension. Work related aspects of Personality- Achievement motivation. **b) ABILITIES AND SKILLS**: Intelligence, physical abilities, and social skills. **c) JOB STRESS:** Meaning & Nature, Sources of Job Stress, Burnout, Work-Leisure Balance.	**15 Hrs**
Unit 3 ORGANIZATIONAL PERCEPTION AND LEARNING	
a) Social Perception and Social Identity: Attribution Process. Perceptual Biases: Systematic Errors, Stereotyping. Perceiving others: Organizational Applications- Performance appraisal. **b) Learning:** principles of learning; Operational Conditioning- Learning through Rewards and Punishments. Training-varieties of training, Organizational behaviour Management.	**15 Hrs**
Unit 4 ORGANIZATIONAL CULTURE AND STRUCTURE	
a.) Organizational Structure: Meaning; **Basic Dimensions** - Hierarchy of authority, span of control, division of labour, line v/s staff positions, decentralization; **Departmentalization** - functional, product and matrix organizations. **b) Organizational Culture**: Meaning and definition, characteristics of organizational culture. **c) Creating, and Transmitting and changing organizational culture**: Creation & Transformation of Work Culture – Tools, composition of workforce, mergers and acquisitions, and Digital Marketing.	**15 Hrs**

References:

Books for Reference

8.) Carson R.C, Butcher JN and Mineka Susan (2005*)., Abnormal Psychology and modern life* (10th edn) New York: Harper-Collins

9.) Kaplan H, Sadock BJ, Grebb JA (1994) *Synopsis of Psychiatry* (7th edn). New Delhi: BL Waverly Pvt. Ltd.

10.) Sarason .I.G & Sarason R.B (2005) *Abnormal PsychologyThe Problems of Maladaptive Behaviour* 11th edition New Delhi Pearson Pub.

11.)Gerald C.Davison & John M.Neale, ***Abnormal Psychology,*** 2000, John Wiley & Sons, New York.S

12.)Alloy,Riskind,Manos, ***Abnormal psychology-current perspectives-ninth edition***-.

13.)Neale, Davidson,Hagga, ***Exploring Abnormal psychology-sixth edition***- -Wiley and sons.

14.)David Sue, Sue and Sue.-third edition ***Understanding abnormal behaviour***- Hougthon Miff

Online e-sources

6.) Abnormal Psychology

courses.lumenlearning.com/abnormalpsychology/

7.) Understanding Abnormal Psychology

www.verywellmind.com/what-is-abnormal-psychology-2794775

8.) Abnormal Psychology – Discovering Psychology Series

www.opentext.wsu.edu/abnormal-psych/wp-content/uploads/sites/41/2018/05/Abnormal-Psychology-2nd-Edition.pdf

9.) Psychological Disorders

www.spsrohini.com/sites/default/files/12 - Psychology - Psychological Disorders-Notes and Video link.pdf

10) Articles on Abnormal Psychology

www.researchgate.net/publication/340536864_Abnormal_Psychology

Course Articulation Matrix – 231666

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	3	3	3	2	1	1	3	-	3
CO 2	3	3	1	1	3	2		-	-	2	-	1
CO 3	3	3	1	1	3	2	-	-	-	2	1	1
CO 4	3	3	1	1	3	3	-	1	-	2	1	1
Weighted Average	**3**	**2.7**	**1**	**1.5**	**3**	**2.5**	**0.5**	**0.5**	**0.25**	**2.25**	**0.5**	**1.5**

Abnormal Psychology (Practicals)

Practicum I - Experimentation

(Minimum 06 Practical to be conducted)

1. Multiphasic Questionnaire (H.N.Murthy)
2. Bell's Adjustment Inventory
3. Yale Brown Obsessive Compulsive Scale
4. Cohen'S Perceived Stress Scale
5. Defence Mechanism Inventory (N R Mrinal & Uam Singhal)
6. Behavioural Deviance Scale (N. S. Chauhan and Saroj Aurora)
7. Alcohol and Drug Attitude Scale (Sunil Saini & Sandeep Singh)
8. Beck Depression Scale
9. Narcissistic Personality Inventory (e-source)

STATISTICS: Mann – Whitney U test & Kruskal – Wallis H (One-Way)

Organizational Psychology (Practicals)

Practicum II – Experimentation

(Minimum 06 Practical to be conducted)

1.) Job Satisfaction (Dr. Amar Singh & Dr. T. R. Sharma)
2.) Interpersonal Skills Inventory (IPSI) (Dr. Luba Jakubowska, Dr. Pooja Sharma and Shivngi Nigam)
3.) Leadership Behaviour Scale (Asha Hinger)
4.) Organizational Commitment Scale (Anukool M. Hyde ad Vishu Roy)
5.) Employee Engagement Scale (Santhosh Dhar and Upindar Dhar)
6.) Workplace Exploitation Scale (Ramandeep Kaur and Meena Jhamat)
7.) Work - Life Balance Scale (Hayman -2005)
8.) Organizational Conflict Scale (Santhosh Dhar and Upindar Dhar)

SEC (23INTPSY01) - Internship Program (Hospital Based Internship) – Optional

Course duration: 14 weeks with 2 hours of lab/field work per week amounting to 2 credits (60 Hrs)

This segment is an optional feature for the Students; an opportunity to score of 2 Credits in the Practical component of VI Sem syllabus, this feature is left to the students discreation. This segment is concerned with enabling the student experience application of Psychology in real life setups. The student is expected to pursue internship of 60 Hrs in a Hospital / NGO / Special Education Centers. During this period the student is expected to get acquainted with the practical implications of Psychology in various realms such as Clinical Setups / Special Schools / NGO's; to explore the scope of Psychology in Mental Health Services, understand how it caters to the Children with Special needs or realize the significance of Psychology facilitating the lifestyle changes or the Social Welfare causes endorsed by NGO's and help people in coping with challenges of life / crisis enhancing the true potential in people. The student has to conduct Case studies in anyone of the prescribed Professional setups. And, after the completion of Internship programme the student must submit a documented report of his/her experiences including the case studies under the supervision of the Subject teacher. Further, the report will be evaluated and approved by the Head of the Department of Psychology provided it meets the expected standards of scientific work. this is mandatory to be eligible for the Practical Examination failing which the candidate shall be not allowed to Write the Practical Examination in the concerned Paper of Internship Programme.

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Continuous Formative Evaluation/Internal Assessment (DSC)

Total marks for each course shall be based on continuous assessments and semester end examinations. Thepattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY	PRACTICAL
Total Marks	100 Marks	50 Marks
Continuous Assessment – 1 (C1)	20 Marks	10 Marks
Continuous Assessment – 2 (C2)	20 Marks	15 Marks
Semester End Examination (C3)	60 Marks	25 Marks

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar,case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment andscore process should be based on completion of remaining 50% of syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college foreach course. This forms the third and final component of assessment (C3) and the maximum marks forthe final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of thecase and decide to conduct special test to such

candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	20	-	20
Seminar/Presentation/Assignment/ Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
Total	20	20	40

- For practical course of full credits, seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance, the marks are 25 (10 + 15) and 25. Evaluated for a total of 50 Marks.
- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decidedby the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study/Assignment etc., the students should be informed aboutthe modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall beobtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE (Controller of Examination) at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

PRACTICAL COMPONENT

Scheme of Valuation for V & VI Sem

Practical Component I & II - Practical Experimentation

C1 and C2 (Practical) are internal tests to be conducted during 8th and 16th weeks of the semester respectively. C3 (Practical Examination) is conducted during the end of the semester for the duration of 3 hours. The students are assessed and evaluated by the External and Internal Examiners - on various skills associated with Psychology Practical – Administration, Procedure, Instructions, Analysis and Interpretation of results of the Subjects performance in the Experiment conducted. The Practical Component is valuated for 50 Marks (during each of the Semesters respectively).

The C1(Test) and C2 (Assignment – Case Study) components are - IA assessment. During the C1 and C2 elements the student is evaluated for 20 marks (collectively) as per the following scheme:

a.) C1 – Test on Experiments - 10 marks (On first Half of the Practical Portions)

b.) C2 – Test on Experiments / Assignment/Case Study/Statistics - 15 marks (On the second Half of Practical Syllabus + Record/Report)

Though the C1 and C2 components are evaluated for 20 marks each for the ease of calculation, however the total marks scored by the student are then normalized to 10 under each component, (C1 and C2 Collectively – 20 + 5 Marks for Practical Record).

Record - 5 Marks; the Practical record has to be evaluated on 5 marks (IA) and then certified by the Head of the Department.

- The student is evaluated for 25 marks during C3 Examination as per the following scheme:

Heading	Marks
Experiment	5
Conduction	5
Group Discussion	5
Viva Voce	5
Statistics	5
TOTAL	**25**

General Pattern on Psychology PRACTICAL Question Paper

(NEP-2020)
Term End Examination for Discipline Specific Paper

Scheme of Valuation for V & VI Sem: Practical Experimentation (Practicum I or Practicum II – Only for Experiments)

Total marks = 50		
Internal assessment =25		
Content	Marks	
Test C1	10	
C2 Test/Assignment (Case Study/Reports/Seminar Presentations; Statistics etc) + Practical Record	10 05	Total 15
Total IA	**25**	
Practical examination =25		
Content	Marks	
Writing Plan and procedure (any one)	05	
Conduction / administration (any one)	05	
Discussion of results (any one)	05	
Statistics	05	
Viva voce	05	
Total Practical Examination	**25**	

Practical Exam Duration & Ordinance

- **The Exam duration for I.A Practicals (Test C1 component) is for 1 Hr and C3 the main Practical Examination is for 3 Hrs.**

- **The student is expected to reach the Examination venue 30 minutes before the schedule.**
- **If the student is delayed beyond 30 min of the given schedule of Practical Examination; then he/she is not entitled or allowed to write the Practical examination for that Semester and will be considered as absent.**

*** **Practical Record** - 5 Marks; Record submission is compulsory prior to the scheduled Examination date failing which the student is considered as not eligible to take up the Practical Examination. The student has to compulsorily submit the written Practical Record during C3 - Final Practical Examination. While, the student is considered as eligible for the C3 component of Psychology Practical Examination, only if the Practical record has been submitted by the student to be evaluated on 5 marks (IA) and then certified by the Head of the Department. In case of an incomplete record the Department has every authority to either consider or penalize the student by deducting the marks for their negligence and lack of involvement.

PRACTICAL COMPONENT –II

Scheme of Valuation for V & VI Sem

V Sem - Research Project (Compulsory)

Research Project – 50 Marks Total

The C1 (Synopsis) and C2 (Documented Report on the Concerned Research Topic) components are - IA assessment.

- C1 - 10 marks (Synopsis)
- C2 - 15 marks (Documented Report on the Research Topic Chosen)

Qualifying C1 & C2 components is compulsory for the student. And also, submission of the Research Document prior to the Commencement Date of Semester End Practical/Project Examination is compulsory, failing which the student shall not be eligible to take up the Semester End Practical Examination.

Research Project - Total marks = 50	
Internal assessment = 25	
Content	Marks
C1- Synopsis of the Research	10
C2 – Documented Research Report	15
Total IA	**25**
Semester End Research Project Based examination = 25	
Content	Marks
Research Presentation (Using PPT)	10
Viva Voce / Pannel Discussion/ Interaction – Research Based	15
Total Sem-End Research Examination	**25**

VI Sem - SEC - Internship Programme (Optional)

Internship Programme – 50 Marks Total

The C1 (Case Study Presentation - 1) and C2 (Documented Report on the Concerned Internship Programme) components are - IA assessment.

- C1 - 10 marks (Case Study Presentation - 1)
- C2 - 15 marks (Documented Report of the Whole Internship Programme)

Qualifying C1 & C2 components is compulsory for the student. And also, submission of the Documented Report of the Internship prior to the Commencement Date of Semester End Practical/Internship Programme based Examination is compulsory, failing which the student shall not be eligible to take up the Semester End Practical Examination.

SEC- Internship Report - Total marks = 50
Internal assessment = 25

Content	Marks
C1- Case Study Presentation (Any One)	10
C2 - Documented Report on the Whole Internship Programme	15
Total IA	**25**
Semester End Research Project Based examination = 25	
Content	Marks
Presentation of Internship Report (Using PPT)	10
Viva Voce / Pannel Discussion/ Interaction – Internship Based	15
Total Sem-End Research Examination	**25**

Practical Exam Duration & Ordinance

- **The Exam duration for I.A Practicals (Test C1 component) is for 1 Hr and C3 the main Practical Examination is for 3 Hrs.**
- **The student is expected to reach the Examination venue 30 minutes before the schedule.**
- **If the student is delayed beyond 30 min of the given schedule of Practical Examination; then he/she is not entitled or allowed to write the Practical examination for that Semester and will be considered as absent.**

DSC - Question Paper Pattern (For V & VI Semesters)

PSYCHOLOGY B.A PROGRAMME

B.A PSYCHOLOGY – DSC

Approved by the Board of Studies in Psychology (2023-2024) and forwarded to the Academic Council and the Governing Council for further reference and consent.

Time: 2:30 Hours **Max. Marks: 60**

Part-A

I. Answer any five of the following questions. **5x2=10**

1.)……
2.)……
3.)……
4.)……
5.)……
6.)……
7.)……

(Asst. Prof. Sujata. M)
Chairperson
BOS/BOE in Psychology
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru-570 012

Part-B

II. Answer any Four of the following questions. **4x5=20**

(Dr. Mridula Singh)
Vice Chansellor Nominee, University of Mysore.

Dr. MRIDULA SINGH
Department of Psychology
Maharaja's College
University of Mysore
Mysore - 570 006
INDIA

8.)……
9.)……
10.)……
11.)……
12.)……
13.)……
14.)……

(Dr. Lancy D'Souza)
Head of the Department
Dept. of Psychology
Maharaja's College
University of Mysore
Mysuru-570 005

(Dr. Archana Bhatt K)

Part-C

III. Answer any Four of the following questions. **3x10=30**

15.)……
16.)……
17.)……
18.)……
19.)……
20.)……

(Asst.Prof. Rithwik Kashyap)
RITHVIK S KASHYAP
M.Phil.(Ph.D)
Assistant Professor
Dept. of Clinical Psychology
JSS Medical College & Hospital
Mysuru
RCI - CRR No.A54202

(Ms. Siyana Salim)

****

List of the BOS Members Signature with Seal – 6/9/2023

Sl. No.	Name and address	Designation	Signature with Seal
1.)	Asst. Prof. Sujata. M HoD, Dept. of Psychology SBRR Mahajana First Grade College, Mysore Ph: 9886191174 Sujatam.fgc@mahajana.edu.in	Chairman	M. Sujata Chairperson BOS/BOE in Psychology SBRR Mahajana First Grade College (Autonomous) Jayalakshmipuram, Mysuru-570 012
2.)	Dr. Mridula Singh Associate Professor Dept. of Psychology Maharajas College, Mysore. Ph: 9448312327 mridulasingh15@gmail.com	Member	Mridula Singh Dr. MRIDULA SINGH Department of Psychology Maharaja's College University of Mysore Mysore - 570 005 INDIA
3.)	Mr. Rithwik Kashyap Asst. Professor Dept. of Clinical Psychology JSS Medical College JSS University (Deemed) Mysore. Ph: 9611314087 rithvikkashyap@gmail.com	Member	RITHVIK S KASHYAP M.Phil.(Ph.D) Assistant Professor Dept. of Clinical Psychology JSS Medical College & Hospital
4.)	Dr Archana Bhatt K Associate Professor & HoD UG & PG Dept. of Psychology Kateel Ashok Pai Memorial College – Shivamogga, Kuvempu University, Ph: 9538298660 archana.kallahalla@gmail.com	Member	Archana Bhatt K Department of Psychology Kateel Ashok Pai Memorial College Shivamogga -577 201
5.)	Dr. Lancy D'Souza Associate Professor & HoD, Dept. of Psychology, Maharaja's College, Mysore Ph: 6363858714 lancyd@gmail.com	Member	Lancy D'Souza Head of the Department Dept. of Psychology College Mysore Mysuru-570 005 **ABSENT**
6.)	Siyana Salim P G Student M.Sc Clinical Psychology Dept. of Clinical Psychology St. Agnes College Mangalore Ph: 9071693910 ishasalim31@gmail.com	Member	

Archana Bhat K
Department of Psychology
Kateel Ashok Pai Memorial College
Shivamogga -577 201

ABSENT

PROPOSED LIST OF BOARD OF EXAMINERS - Department of Psychology

Academic Session: 2023-2024				
Sl. No	**Name**	**Designation**	**Address for Communication**	**E-mail and Mobile No.**
1.	**Asst. Prof. Sujata M**	**Chairman & HoD**	**Dept. of Psychology SBRR Mahajana First Grade College, Mysore**	**Sujatam.fgc@mahajana.edu.in 9886191174**
1	**Dr.Lancy D'Souza**	**Associate Professor**	**Maharaja's College, Mysore, Karnataka.**	**lancyd@gmail.com 9986332616**
2	**Dr. Rekaha**	**Asst. Professor**	**Govt. Women's College, (Autonoumus) Mandya**	**rekhamsumesh@gmail.com 9986627024**
3	**Dr. Ranganath**	**Asst. Professor & HoD**	**Govt. First Grade College for Women, Mysore**	**Pr.ranganath224@gmail.com 9164918166**
4	**Dr. Mridula Singh**	**Professor**	**Maharaja's College, Mysore, Karnataka.**	**mridulasingh15@gmail.com 9448312327**
5	**Mrs. Nasreen Afza**	**Asst. Professor**	**Teresian College, Mysore.**	**nasreen.afza@yahoo.in 9900667334**
6	**Mrs. Rajani Eithal**	**Asst. Professor**	**Maharani's Arts & Commerce College for Women, Mysore, Karnataka.**	**rajani.aithal@gmail.com 9449263743**
7	**Mr. Ginsen George**	**Asst.Professor &HoD**	**St. Philomina's College (Autonomous), Mysore**	**ginsongeorge24@gmail.com 9072442835**
8	**Mrs . Manonmani**	**Asst. Professor**	**Maharaja's College, Mysore, Karnataka.**	**manu236a@gmail.com 9448672866**
9	**Mr. Akhilesh**	**Asst. Professor**	**Maharani's Govt. College Mysore**	**akishreyas@gmail.com 9035241572**
10	**Mr. Satish Chandra**	**Asst. Professor**	**Pallagatti Adavappa Arts & Commerce First Grade College, Tiptur, Karnataka**	**Satishchandrapac985@gmail.com 9481692732**
11	**Smt. Tejashwini B.P**	**Asst. Professor**	**Maharani's Arts & Commerce College for Women, Mysore, Karnataka.**	**bpthejaswini@gmail.com 09845821587**
13	**Mr. Jhonson**	**Asst. Professor**	**Christ College, Mysore**	**johns9931@yahoo.com 9448827722**

DEPARTMENT OF SANSKRIT

Motto

संस्कृतं संस्कृतेर्मूलम्

Vision

As Sanskrit is the origin for our culture, making the students good Citizens by teaching that language.

Mission

- By fulfilling the needs to become good citizens.
- By creating awareness of Puranas and Shastras in the students.
- By giving illustrations of Upanishads, Ramayana, Mahabharatha, Bhagavadgita etc., during teaching and inculcating Moral Values in them.

Program Outcome (PO) Attributes

PO 1: Domain Knowledge

PO 2: Problem Analysis

PO 3: Design and Development of Solutions

PO 4: Investigation & Research

PO 5: Use of Modern Techniques/Tools

PO 6: Impact of Science on Society

PO 7: Environment and Sustainability

PO 8: Moral and Ethical Values

PO 9: Individual and Team Work with Time Management

PO 10: Communication

PO 11: Project Management and Finance

PO 12: Life-long Learning

Objectives: SANSKRIT LANGUAGE

- This course will help the students develop a fair idea of the works of great Sanskrit poets.
- They will be able to appreciate the styles and thoughts of individual poets focusing on the poetical, artistic, cultural and historical aspects of their works.
- This course will enhance competence in chaste classical Sanskrit and give them skills in translation and interpretation of poetic works.
- Students will be able to write Devnagari Scripts
- The course(subject) will enable students to familiarize themselves with some leading classical prose works and the individual literary styles of their authors.
- After the completion of this course the learner will be exposed to the socio-cultural conditions of the Indian society as reflected in the prescribed texts.
- They will acquire skills in advanced Sanskrit communication.

List of BoS Members 2021-22

1	HoD	**Dr. Shrinivas**	**Assistant Professor**	**Mahajana First Grade College**	**Shrinivas.fgc@mahajana.edu.in** **9964383565**
2	Nominee by the Vice Chancellor	**Dr .Narayana Bhatta K**	Professor & HOD	DoS In Sanskrit, Manasagangotri , Mysore.	**dr.k.narayanabhatta@gmail.com** **9449592581**
3	Two Experts from Outside the University	**1. Dr. M Rangaswamy**	Assistant Professor DOS in Sanskrit	Government Autonomous Sahyadri College Shivamogga 577203	**rangasscs1969@gmail.com** **9535016974**
		2. **Dr.Kumarasubrahmanya Bhat**	Associate Professor & HOD	DOS In Sanskrit, University College Hampanakatta Manglore 575001	**ksbamai@gmail.com** **9448869289**
4	Alumni	**Shree Sumukha Pranesh**	Wealth Manager	Branch Manager ICICI Securities C 201,A N Comforts ,Siddappa Layout Bangalore 61 .	**sumukhapranesh95@gmail.com** **8762380685**

Course Structure (NEP)

AECC (Sanskrit)

I Year

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		Marks
Sanskrit – I Sem									
AECC(1)	**Sanskrit Poetry, Grammar and Comprehension** **BA/BSc/BCA** – 21SAN109 **BCom/BBA (All)** – 21SAN110	**2**	**2**	**2:1:0**	**20**	**20**	**60**	**2½ Hours**	**100**
Sanskrit – II Sem									
AECC(2)	**Sanskrit Prose, Grammar and Translation** **BA/BSc/BCA** – 21SAN209 **BCom/BBA (All)** – 21SAN210	**2**	**2**	**2:1:0**	**20**	**20**	**60**	**2½ Hours**	**100**

AECC (1) Syllabus for BA/Bsc/BCA SANSKRIT

Course Code: BA/BSc/BCA – 21SAN109	**Course Type & Title:** AECC(1) Sanskrit Poetry, Grammar and Comprehension
Course Credits (L:T:P): 3 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials)
Total Contact Hours: 28 Hours (Theory) 28 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1: Appreciate the Development of Sanskrit poetry Literature .

CO2: Qualities of Rama for Personality Development .

CO3: Character of Rama special features of Rama katha as Described in the Balakanda of Valmiki Ramayana.

CO4: Vocabulary building is helpful in Sanskrit sentences. Karakas Role in Sanskrit sentences.

Course Content:

Course Content	Hours
UNIT – 1	
A Short History of Sanskrit Literature – Written By T. K. Ramachandra Aiyar (Page 1-98)	**14**
UNIT – 2	
Selected shlokas from Valmiki Ramayana – Balakanda – Sarga 1 – 1 to 30 shloka	**14**
UNIT – 3	
Valmiki Ramayana – Balakanda – Sarga 1 – 31 to 60 shloka	**14**

UNIT – 4	14
• Vocabulary building - Samskrita Vyavahara Sahasri (page1-18) • Karaka prakarana – Samskrita Gadya Padya Vallari – (Page 201-204) • Comprehension - Shevadhi-2 (page 133)	

Text Book: Valmiki Ramayana – Balakanda – Sarga 1(1 to 60 shloka)

Recommended Books

1. A Short History of Sanskrit Literature – Written By T. K. Ramachandra Aiyar Published By R.S.VADHYAR&SONS, Book Sellers &Publishers KALPATHI:PALGHAT -678003, First Edition 1977
2. Srimad Ramayana – Valmiki.
3. Samskrita Vyavahara Sahasri – Samskrita Bharati, (Delhi-Bengalur) Page 1-18.
4. Samskrita Gadya Padya Vallari – (Page 201-204), Government of Karnataka, Karnataka Textbook Society (R) Bengaluru. RPT -2012-13.
5. Shevadhi-2 – Government of Karnataka, Bengaluru. RPT-2019. Page 133.

Digital Resources: www.archieve.org
https://www.wikipedia.org/

Course Articulation Matrix –21SAN109

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	2	1	2
CO 2	2	2	1	1	1	2	1	3	2	2	1	2
CO 3	2	2	1	1	1	2	1	3	2	2	1	2
CO 4	2	2	1	1	1	1	1	-	1	2	1	2
Weighted Average	**2**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**2**	**1**	**2**

AECC (2) Syllabus for BA/Bsc/BCA SANSKRIT

Course Code: BA/BSc/BCA - 21SAN209	**Course Type & Title:** AECC(2)) **Sanskrit Prose, Grammar and Translation**
Course Credits (L:T:P): 3 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials)
Total Contact Hours: 28 Hours (Theory) 28 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1 know the origin and development of Sanskrit Prose literature.

CO2. Know the Gist and message of Adi Parva

CO3. Know about content and and message of Sabha Parva. .

CO4. Apply the laws of sandhi (euphonic combinations) in a Sanskrit passage. Gender place an Important Role in the Formation of sentences.

Course Content:

Course Content	Hours
UNIT – 1	
Introduction to Sanskrit Gadya Literature - Samskrita Bhashashastra Mattu Sahitya Charitre – Dr K Krishnamurthy, Vidwan Ranganatha sharma and Vidwan H.K.Siddagangaiah. (page 591-638)	**14**
UNIT – 2	
Bharata Sangraha – By Lakshmana Suri – Adi Parva	**14**
UNIT – 3	
Bharata Sangraha – By Lakshmana Suri – Sabha Parva.	**14**

Unit-4	14
• Identifying Namapadas – Samskrit Shabdachandrika (page 1 to 12) • Identifying Sandhi – "Sandhihi" – G.Mahabaleshwara Bhat (Page 1-31) • Translation from Sanskrit to Kannada/English (Unseen Sentences)	

Text Book: - Bharata Sangraha – By Lakshmana Suri – Adi parva and Sabha Parva.

Recommended Books

1. Bharata Sangraha - Lakshmanasuri.
2. Samskrit Shabdachandrika (page 1 to 12) – Vidwan N.Ranganatha Sharma, Vidyabharati Grantha mala -3, Sringeri. 1995.
3. "Sandhihi" – G.Mahabaleshwara Bhat (Page 1-31) Samskrita Bharati, Bengaluru. RPT-2017.

Digital Resources: www.archieve.org https://www.wikipedia.org/

Course Articulation Matrix – 21SAN209

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	2	1	2
CO 2	2	2	1	1	1	2	1	3	2	2	1	2
CO 3	2	2	1	1	1	2	1	3	2	2	1	2
CO 4	2	2	1	1	1	1	1	-	1	2	1	2
Weighted Average	**2**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**2**	**1**	**2**

AECC (1) Syllabus for B.Com/BBA/BBA(H&H) BBA (Avi&In.Tour) SANSKRIT

Semester I Course Code: **BCom/BBA (All)** – 21SAN110	**Course Title:** AECC(1) Sanskrit Poetry, Grammar and Comprehension
Course Credits (L:T:P): 3 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials)
Total Contact Hours: 28 Hours (Theory) 28 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1. Appreciate the Development of Sanskrit poetry Literature .

CO2 Glimpses of the Karmayoga — The lesson incorporated in the Bhagavad Gita. Needless to say it is one of the most comprehensive tests of all literature that gives mankind the knowledge of high moral lesson and helps them find out the right path as Arjuna got it.

CO3. Importance of Karmayoga in Life as Described in Bhagavadgeeta

CO4. Vocabulary building is helpful in Sanskrit sentences. Karakas Role in Sanskrit sentences.

Course Content:

Course Content	Hours
UNIT – 1	
A Short History of Sanskrit Literature – Written By T. K. Ramachandra Aiyar (Page 1-98)	**14**
UNIT – 2	
Selected portions from Bhagawad Gita Chapter 3 (1-20 Shlokas)	**14**
UNIT – 3	
Bhagawad Gita Chapter 3 (21-43 Shlokas)	**14**

UNIT – 4	14
Vocabulary building - Samskrita Vyavahara Sahasri (page1-18) • Karaka prakarana – Samskrita Gadya Padya Vallari – (Page 201-204) • Comprehension - Shevadhi-2 (page 133)	

Text Book: Text Book- Bhagawad Gita
Chapter 3

Recommended Books

1. A Short History of Sanskrit Literature – Written By T. K. Ramachandra Aiyar Published By R.S.VADHYAR&SONS, Book Sellers &Publishers KALPATHI:PALGHAT -678003, First Edition 1977
2. Srimad Bhagawadgita – Vyasa.
3. Samskrita Vyavahara Sahasri – Samskrita Bharati, (Delhi-Bengaluru) Page 1-18.
4. Samskrita Gadya Padya Vallari – (Page 201-204), Government of Karnataka, Karnataka Textbook Society (R) Bengaluru. RPT -2012-13.
5. Shevadhi-2 – (Page 133) Government of Karanataka, Bengaluru. RPT-2019.

Digital Resources: www.archieve.org
https://www.wikipedia.org/

Course Articulation Matrix – 21SAN110

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	3	1	1	1	2	1	3	2	2	1	2
CO 2	2	3	1	1	1	2	1	3	2	2	1	2
CO 3	2	3	1	1	1	2	1	3	2	2	1	2
CO 4	2	-	1	1	1	1	1	-	1	2	1	2
Weighted Average	**2**	2.2	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**2**	**1**	**2**

AECC (2) Syllabus for B.Com/BBA/BBA(H&H) BBA (Avi&In.Tour) SANSKRIT

Course Code: BCom/BBA (All)– 21SAN210	**Course Type & Title:** AECC(2) **Sanskrit Prose, Grammar and Translation**
Course Credits (L:T:P): 3 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials)
Total Contact Hours: 28 Hours (Theory) 28 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1: Introduction and specialties of Sanskrit Prose Literature .

CO2: Know the Gist and message of Udyogaparva .

CO3: Know about content and and message of Bheeshmaparva .

CO4: Apply the laws of sandhi (euphonic combinations) in a Sanskrit passage. Gender place an Important Role in the Formation of sentences .

Course Content:

Course Content	Hours
UNIT – 1	
Introduction to Sanskrit Gadya Literature - Samskrita Bhashashastra Mattu Sahitya Charitre – Dr K Krishnamurthy, Vidwan Ranganatha sharma and Vidwan H.K.Siddagangaiah. (page 591-638)	**14**
UNIT – 2	
Bharata Sangraha – By Lakshmana Suri – Udyoga parva.	**14**
UNIT – 3	
Bharata Sangraha – By Lakshmana Suri – Bhishma parva.	**14**

UNIT – 4	14
• Identifying Namapadas – Samskrit Shabdachandrika (page 1 to 12) • Identifying Sandhi – "Sandhihi" – G.Mahabaleshwara Bhat (Page 1-31) • Translation from Sanskrit to Kannada/English (Unseen Sentences)	

Text Book: Bharata Sangraha – By Lakshmana Suri – Udyoga parva and Bhishma parva

Recommended Books

- 1. Bharata Sangraha - Lakshmanasuri.
- 2. Samskrit Shabdachandrika (page 1 to 12) – Vidwan N.Ranganatha Sharma,
- Vidyabharati Grantha mala -3, Sringeri. 1995.
- 3. "Sandhihi" – G.Mahabaleshwara Bhat (Page 1-31) Samskrita Bharati,
- Bengaluru. RPT-2017.

- **Digital Resources:** www.archieve.org https://www.wikipedia.org/

Course Articulation Matrix – 21SAN210

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	2	1	2
CO 2	2	2	1	1	1	2	1	3	2	2	1	2
CO 3	2	2	1	1	1	2	1	3	2	2	1	2
CO 4	1	2	1	1	1	1	1	-	1	2	1	2
Weighted Average	1.75	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**2**	**1**	**2**

Continuous Formative Evaluation/Internal Assessment (AECC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY
TOTAL MARKS	100
Continuous Assessment – 1 (C1)	20
Continuous Assessment – 2 (C2)	20
Semester End Examination (C3)	60

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.
b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.
c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.
d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.
e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such

tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1	**C2**	**TOTAL**
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
TOTAL	20	20	40

- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

QUESTION PAPER PATTERN
For Ability Enhancement Compulsory Course
(All Programs)

Max Marks 60 Exam Duration-2½ Hours

Qn. No.	Particulars		Marks	Total
	SECTION – A			
I	Multiple Choice Questions	10 out of 10	01	10
II	Reference to Context From Text Book only 1. 2. 3. 4.	2 out of 4	05	10
	SECTION – B			
III	Short Answer Questions (From Text Book) 1. 2. 3.	2 out of 3	05	10
IV	Questions from Grammar/Translation. as the case may be 1. 2. 3.	2 out of 3	05	10
	SECTION – C			
V	Essay type Answer Questions From Text Book only	2 out of 3	10	20
	Total			**60**

The BOS Meeting of Sanskrit (UG) was held on 04/12/2021. The Following Board members were present - [ONLINE]

Sl. No.	Name	Signature with date
1	Dr. Shrinivas	04/12/2021
2	Dr .Narayana Bhatta K	11-12-2021
3	Dr.Kumarsubramanya Bhat	A Subrahmanya
4	Dr.Rangaswami M	13/12/2021
5	Shree Sumukha Pranesh	ABSENT

Place : MYSURU

Date: 04.12.2021

Signature of the Chairperson

Chairperson
BOS/BOE in Sanskrit
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru-570 012

DEPARTMENT OF SANSKRIT

Motto

संस्कृतं संस्कृतेर्मूलम्

Vision

As Sanskrit is the origin for our culture, making the students good Citizens by teaching that language.

Mission

- By fulfilling the needs to become good citizens.
- By creating awareness of Puranas and Shastras in the students.
- By giving illustrations of Upanishads, Ramayana, Mahabharatha, Bhagavadgita etc., during teaching and inculcating Moral Values in them.

Program Outcome (PO) Attributes

PO 1: Domain Knowledge

PO 2: Problem Analysis

PO 3: Design and Development of Solutions

PO 4: Investigation & Research

PO 5: Use of Modern Techniques/Tools

PO 6: Impact of Science on Society

PO 7: Environment and Sustainability

PO 8: Moral and Ethical Values

PO 9: Individual and Team Work with Time Management

PO 10: Communication

PO 11: Project Management and Finance

PO 12: Life-long Learning

Objectives: SANSKRIT LANGUAGE

- This course will help the students develop a fair idea of the works of great Sanskrit poets.
- They will be able to appreciate the styles and thoughts of individual poets focusing on the poetical, artistic, cultural and historical aspects of their works.
- This course will enhance competence in chaste classical Sanskrit and give them skills in translation and interpretation of poetic works.
- Students will be able to write Devanagari Scripts
- The course(subject) will enable students to familiarize themselves with some leading classical prose works and the individual literary styles of their authors.
- After the completion of this course the learner will be exposed to the socio-cultural conditions of the Indian society as reflected in the prescribed texts.
- They will acquire skills in advanced Sanskrit communication.

List of BoS Members-2022-23

1	HoD	**Dr. Shrinivas**	**Assistant Professor**	**Mahajana First Grade College**	**Shrinivas.fgc@mahajana.edu.in** **9964383565**
2	Nominee by the Vice Chancellor	**Dr. Guruprasad**	**Assistant professor & H O D**	**M I T First Grade college , Mananthavadi Road, Vidyaranyapuram , Mysuru, Karnataka 570008**	**guruprasaada@gmail.com** **82174 73433**
3	Two Experts from Outside the University	**1. Dr. M Rangaswamy**	Assistant Professor DOS in Sanskrit	Government Autonomous Sahyadri College Shivamogga 577203	**rangasscs1969@gmail.com** **9535016974**
		2. **Dr.Kumarasubrahmanya Bhat**	Associate Professor & HOD	DOS In Sanskrit, University College Hampanakatta Manglore 575001	**ksbamai@gmail.com** **9448869289**
4	Alumni	**Shree Sumukha Pranesh**	Wealth Manager	Branch Manager ICICI Securities C 201,A N Comforts ,Siddappa Layout Bangalore 61 .	**sumukhapranesh95@gmail.com** **8762380685**

Course Structure (NEP)

AECC (Sanskrit)

II Year

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		Marks
Sanskrit – III Sem									
AECC(3)	Sanskrit Champu Kavya and Grammar **BA/BSc/BCA** – 22SAN309 **BCom/BBA (All)** – 22SAN310	**2**	**2**	**2:1:0**	**20**	**20**	**60**	**2½ Hours**	**100**
Sanskrit – IV Sem									
AECC(4)	Drama and Dramaturgy and छन्दः **BA/BSc/BCA** – 22SAN409 **BCom/BBA (All)** – 22SAN410	**2**	**2**	**2:1:0**	**20**	**20**	**60**	**2½ Hours**	**100**

AECC (3) Syllabus for BA/Bsc/BCA SANSKRIT

Course Code: BA/BSc/BCA – 22SAN309	**Course Type & Title:** AECC(3) Sanskrit Champu Kavya and Grammer
Course Credits (L:T:P): 3 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials)
Total Contact Hours: 28 Hours (Theory) 28 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1:. Know about origin and Development of Sanskrit champu kavyas

CO2: Goal for the future, Ability to take right Decisions, Ability to face downs in life, Maintain and follow Great Traditions of Indian Society.

CO3:. Understanding concepts

CO4:. Understanding the technique of chandass

Course Content:

Course Content	Hours
UNIT – 1	
Introduction to classical Sanskrit literature with special reference to Champu Kavya and its lakshanas. Introduction to Author and Text	**14**
UNIT – 2	
Introduction to Author and Text नीलकण्ठविजय चम्पूः-तृतीयाश्वासः, 24 श्लोक पर्यन्तम्	**14**
UNIT – 3	
नीलकण्ठविजय चम्पूः-तृतीयाश्वासः,25 श्लोकत: 73 श्लोक पर्यन्तम्	**14**
UNIT – 4 अनुष्टुप्, इन्द्रवज्रा, वसन्ततिलका,मालिनी,मन्दाक्रान्ता	14

Text Book: नीलकण्ठविजय चम्पूः-तृतीयाश्वासः

Recommended Books

1. Samskruta Bhashashastra Mattu Sahitya charitre :vidwan Dr.K Krishnamurty, Vidwan N Ranganath Sharma ,Vidwan H k siddagangayya :Pubished By - Dr.K Krishnamurty Pratisthana ® Mysuru ,Page No .663 to 704
2. नीलकण्ठविजय चम्पूः Pubished By- Prasaranga ,University of Mysuru
3. Kuvalayananda ,written by Appayya Dixit

Digital Resources: www.archieve.org

https://www.wikipedia.org/

Course Articulation Matrix –22SAN309

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	2	2	2
CO 2	2	2	1	1	1	2	1	3	2	2	2	2
CO 3	2	2	1	1	1	2	1	3	2	2	2	2
CO 4	2	2	1	1	1	1	1	-	1	2	2	2
Weighted Average	**2**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**2**	**2**	**2**

AECC (3) Syllabus for B.Com/BBA/BBA(H&H) BBA (AIR& TR)SANSKRIT

Course Code: BCom/BBA (All) – 22SAN310	**Course Type & Title:** AECC(3) Sanskrit Champu Kavya and Grammer
Course Credits (L:T:P): 3 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials)
Total Contact Hours: 28 Hours (Theory) 28 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1:. Know about origin and Development of Sanskrit champu kavyas

CO2:Goal for the future, Ability to take right Decisions, Ability to face downs in life, Maintain and follow Great Traditions of Indian Society.

CO3:Understanding concepts

CO4:Know about Alankara (figures of speech)

Course Content:

Course Content	Hours
UNIT – 1	
Introduction to classical Sanskrit literature with special reference to Champu Kavya and its lakshanas	**14**
UNIT – 2	
Introduction to Author and Text. भोजराजविरचित चम्पूरामायणम्-किष्किन्धाकाण्डः, 24 श्लोक पर्यन्तम्	**14**
UNIT – 3	
भोजराजविरचित चम्पूरामायणम्-किष्किन्धाकाण्डः, 25 त: 48 श्लोक पर्यन्तम्	**14**
UNIT – 4 उपमालङ्कारः,रूपकालङ्कारः,अनन्वयालङ्कारः,उत्प्रेक्षालङ्कारः,श्लेषालङ्कारः	14

Text Book: भोजराजविरचित चम्पूरामायणम्-किष्किन्धाकाण्डः

Recommended Books

1. Samskruta Bhashashastra Mattu Sahitya charitre :vidwan Dr.K Krishnamurty, Vidwan N Ranganath Sharma ,Vidwan H k siddagangayya :Pubished By - Dr.K Krishnamurty Pratisthana ® Mysuru ,Page No .663 to 704
2. भोजराजविरचित चम्पूरामायणम्-किष्किन्धाकाण्डः Pubished By- Prasaranga ,University of Mysuru
3. Kuvalayananda ,written by Appayya Dixit

Digital Resources: www.archieve.org

https://www.wikipedia.org/

Course Articulation Matrix – 22SAN310

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	2	1	2
CO 2	2	2	1	1	1	2	1	3	2	2	1	2
CO 3	2	2	1	1	1	2	1	3	2	2	1	2
CO 4	2	2	1	1	1	1	1	-	1	2	1	2
Weighted Average	**2**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**2**	**1**	**2**

AECC (4) Syllabus for BA/Bsc/BCA SANSKRIT

Course Code: BA/BSc/BCA – 22SAN409	**Course Type & Title:** AECC(4) Sanskrit Drama and Dramaturgy and छन्दः
Course Credits (L:T:P): 3 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials)
Total Contact Hours: 28 Hours (Theory) 28 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1: Know about origin and Development of Sanskrit Drama

CO2: Grasp about Enacting Drama, one should become the actor, Knowing Great Indian Traditions and Heritage .Art and Architecture. Culture. Believes. Character Building, Analyze and adopt the good Character in the life, Develop a New Ideas. Inculcate Communication Skills.

CO3: Understanding concepts

CO4: Understanding the technique of chandass

Course Content:

Course Content	Hours
UNIT – 1	
Unit-1 Introduction to Sanskrit Drama and Dramaturgy ,origin and Development of Sanskrit Drama,Dasarupakas and their lakshanas , Important Drushya Kavyas (Dramas) and Dramatists in Sanskrit Literature	**14**
UNIT – 2	
Introduction to Author and Text दूतवाक्यं -25 श्लोक पर्यन्तम्	**14**

UNIT – 3	
दूतवाक्यं -26 श्लोकत: 53 श्लोक पर्यन्तम्	**14**
UNIT – 4 अनुष्टुप्, इन्द्रवज्रा, वसन्ततिलका,मालिनी,मन्दाक्रान्ता.	14

Text Book: दूतवाक्यं of भासः

Recommended Books

1. Samskruta Nataka, A R krishnashastry ,Prasaranga ,Manasagangotri ,Mysuru -1988

Page number 1 -58

2. प्रतिमा नाटकं – भासविरचितम् , Motilal Banarasidas Publishers ,Delhi-1998

3. वृत्तरत्नाकर:,भट्ट्केदारविरचित:, Motilal Banarasidas,Delhi-1993

Digital Resources: www.archieve.org
https://www.wikipedia.org/

Course Articulation Matrix – 22SAN409

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	2	1	2
CO 2	2	2	1	1	1	2	1	3	2	2	1	2
CO 3	2	2	1	1	1	2	1	3	2	2	1	2
CO 4	2	2	1	1	1	1	1	-	1	2	1	2
Weighted Average	**2**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**2**	**1**	**2**

AECC (4) Syllabus for B.Com/BBA/BBA(H&H) BBA (AIR& TR)SANSKRIT

Course Code BCom/BBA (All) – 22SAN410	**Course Type & Title:** AECC(4) Sanskrit Drama and Dramaturgy and छन्दः
Course Credits (L:T:P): 3 (2:1:0)	**No. of Teaching Hours/Week:** 02 Hours (Theory) 02 Hours (Tutorials)
Total Contact Hours: 28 Hours (Theory) 28 Hours (Tutorials)	**Formative Assessment Marks:** 40
Exam Duration: 2½ Hours	**Semester End Examination Marks:** 60

Course Outcomes (COs):

CO1:. Know about origin and Development of Sanskrit Drama

CO2: Grasp about Enacting Drama, one should become the actor, Knowing Great Indian Traditions and Heritage .Art and Architecture. Culture. Believes. Character Building, Analyze and adopt the good Character in the life, Develop a New Ideas. Inculcate Communication Skills.

CO3: Understanding concepts

CO4:Understanding the technique of chandass

Course Content:

Course Content Content	Hours
UNIT – 1	
Introduction to Sanskrit Drama and Dramaturgy ,origin and Development of Sanskrit Drama,Dasarupakas and their lakshanas , Important Drushya Kavyas (Dramas) and Dramatists in Sanskrit Literature	**14**
UNIT – 2	
Introduction to Author and Text **प्रतिमा नाटकं - भासः(प्रथमाङ्कः)**	**14**
UNIT – 3	
प्रतिमा नाटकं - भासः(द्वितीय-तृतीयाङ्कौ)	**14**
UNIT – 4	**14**
अनुष्टुप्, इन्द्रवज्रा, वसन्ततिलका,मालिनी,मन्दाक्रान्ता	

Text Book: प्रतिमा नाटकं - भासः(प्रथम,द्वितीय,तृतीयाङ्काः)

Recommended Books

- Samskruta Nataka, A R krishnashastry ,Prasaranga ,Manasagangotri ,Mysuru -1988
- Page number 1 -58
- प्रतिमा नाटकं – भासविरचितम् , Motilal Banarasidas Publishers ,Delhi-1998
- वृत्तरत्नाकरः,भट्ट्केदारविरचितः, Motilal Banarasidas,Delhi-1993
- **Digital Resources:** www.archieve.org
- https://www.wikipedia.org/

Course Articulation Matrix – 22SAN410

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	1	1	2	1	3	2	2	1	2
CO 2	2	2	1	1	1	2	1	3	2	2	1	2
CO 3	2	2	1	1	1	2	1	3	2	2	1	2
CO 4	2	2	1	1	1	1	1	-	1	2	1	2
Weighted Average	**2**	**2**	**1**	**1**	**1**	**1.75**	**1**	**2.22**	**1.25**	**2**	**1**	**2**

Continuous Formative Evaluation/Internal Assessment (AECC)

Total marks for each course shall be based on continuous assessments and semester end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively and 50:50 for IA and Semester End Practical Examinations respectively.

	THEORY
TOTAL MARKS	100
Continuous Assessment – 1 (C1)	20
Continuous Assessment – 2 (C2)	20
Semester End Examination (C3)	60

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course and within 45 working days of semester program.
b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on completion of remaining 50% of syllabus of the course of the semester.
c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the college for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.
d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher, but before commencement of the concerned semester end examinations.
e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such

tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1	**C2**	**TOTAL**
Session Test	20	-	20
Seminar/Presentation/Assignment/Activity/Case Study/Field Work/Project Work/Quiz etc.	-	20	20
TOTAL	20	20	40

- Conduct of Test, Seminar, Case study/Assignment etc., can be either in C1 or in C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct test/seminar/case study etc., The students should be informed about the modalities well in advance. The evaluated courses assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before commencement of the semester end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the semester end examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

QUESTION PAPER PATTERN
For Ability Enhancement Compulsory Course
(All Programs)

Max Marks 60 Exam Duration-2½ Hours

Qn. No.	Particulars		Marks	Total
	SECTION – A			
I	Multiple Choice Questions	10 out of 10	01	10
II	Reference to Context From Text Book only 1. 2. 3. 4.	2 out of 4	05	10
	SECTION – B			
III	Short Answer Questions (From Text Book) 1. 2. 3.	2 out of 3	05	10
IV	Questions from Grammar/Translation. as the case may be 1. 2. 3.	2 out of 3	05	10
	SECTION – C			
V	Essay type Answer Questions From Text Book only	2 out of 3	10	20
	Total			**60**

Mahajana Education Society (R)
Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

Date:10.09.02022

BoS Meeting Proceedings

The BoE meeting of **SANSKRIT** (UG) was held on **10.09.2022** The following Board members were present.

Sl. No.	Name	Signature with date
1	Dr. Shrinivas	10/9/2022
2	Dr. Guruprasad	10/09/2022
3	Dr.Kumarasubrahmanya Bhat	AKSubrahmanya 10.09.2022
4	Dr.M Rangaswamy	10/09/2022
5	Shri. Sumukha Pranesh	S Ksha.

Place - MYSURU.
Date - 10/09/2022.

Chairperson
BOS/BOE in Sanskrit
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru-

Mahajana Education Society(R.)
Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF SOCIOLOGY

UG	✓
PG	

NEP Syllabi for I & II Semester and B A. SOCIOLOGY
2021-22

Department of Sociology

Motto:

Globalizing through development of Intellectual Culture

Vision:

Building Sociological Imagination

Mission:

Sociological Programmes provide students with a broad and actionable education, applicable to a variety of career paths that includes research, writing and critical thinking skills.

Program Outcomes (POs) for Bachelor of Arts

PO 1: Domain Knowledge: Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of concerned domain.

PO 2: Problem Analysis: This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.

PO 3: Design & Development of Solutions: Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Info-graphics and Approaches for arriving at relevant and desirable solutions.

PO 4: Research & Investigation: Knowledge and application of "Research Methods" to investigate domain specific problems and derive scientific conclusions through testing of Hypotheses and relevant findings empirically.

PO 5: Usage of Modern Tools and Techniques: Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.

PO 6: Social Sciences & Society – Promotes domain specific literacy to illuminate the significance of each discipline and its applicability for the well-being of Society.

PO 7: **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channelize initiatives towards sustainability.

PO 8: Moral and Ethical Values: Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards attainment of harmony and co-existence.

PO 9: **Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in the diversified and multidisciplinary areas.

PO 10: **Communication:** Demonstrates Competency in comprehending and conceptualizing discipline specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11: **Economics and Project Management:** Understand the Economic Concept in the context of specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.

PO 12: Lifelong Learning: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal.

List of BoS Members

Sl no.	Category	Name & Designation	Address for Communication	e-Mail & Mobile No.
01	Chairperson	Radha MS Asst. Professor	Dept of Sociology SBRR Mahajana FGC, Jayalakshmipuram, Mysuru	radhamfgc@gmail.com
02	Vice Chancellor Nominee	Dr Rekha Jadhav Associate Professor	Dept of Sociology Maharaja First Grade College, Mysuru	Rekhakushi6666@gmail.com
03	Expert from other University	Dr.Vinay Rajath.D Professor	Chiarperson Dept of Studies in Sociology University of Mangalore, Konaje	vinayrajath@gmail.com
04		Dr Jayashree Professor	Chairperson DoS in Sociology University of Mangalore	Ab
05	Alumni	Dr. Sowmya Kumar Associate Professor	Maharani's Arts College for Women, Mysuru	sociologychest@gmail.com

OBJECTIVES : SOCIOLOGY

1. Introduce the students to the basic concepts and processes in sociology to understand social life.
2. Provide different perspectives on understanding the social life of people.
3. Update the students with different fields of Sociology and the latest developments in the field.
4. Develop the skills to analyze, interpret and present today's social situation - developments and problems.
5. Critically appreciate the social construction of reality.
6. Ability to examine, relate and connect theory with research.

Year-wise Programme Structure
Discipline Specific Courses (DSC) and Open Electives (OE)

Course, Type, Code & Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		EXAM		
		L	T/P	L: T:P	C1	C2	C3		
Sociology I Sem									
DSC(1) 211151	Understanding Sociology	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
DSC(2) 211152	Changing Social Institutions in India	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
OE(1)	Indian Society: Continuity& Change 21OESOC101	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
	Sociology of Everyday Life 21OESOC102	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
Open Elective: Anyone to be opted									
Sociology II Sem									
DSC(3) 211251	Foundations of Sociological Theories	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
DSC(4) 211252	Sociology of Rural Life In India	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
OE(2)	Social Development in India 21OESOC201	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
	Society through Gender Lens 21OESOC202	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100

Open Elective: Anyone to be opted

DSC(1) Syllabus for BA Sociology(Basic and Honors)

Course Code: 211151	**Course Title: DSC (1) UNDERSTANDING SOCIOLOGY**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes (COs)

CO1:Identify the facets of the nature and role of Sociology in a changing world.

CO2:Comprehend the uniqueness of Sociological imagination in the study of the real world.

CO3: Recognize the different perspectives of perceiving the working of social groups & current social issues in oral & written forms.

Course Content

Books for Reference:

Unit – 1 Sociology as Science	**16**
Chapter-1:Sociology as a study of Groups and Social Interaction - Definition, Scope and Need; Sociology as Science Vs. Sociology as Social Reform. **Chapter- 2** Foci of Sociology: Social Institutions, Social Inequality and Social Change. **Chapter -3** (C) Sociological Eye (Randall Collins), Sociological Imagination (C Wright Mills' distinction between trouble i.e. personal in nature and issue, i.e. public in nature). **Chapter- 4.** Sociological Perspectives: Functionalist, Conflict, Symbolic Interactionist, Feminist Chapter No. 5 Social Construction of Reality.	
Unit – 2 Culture and Socialisation	**16**
Chapter-6. Culture: Definition and Elements of Culture; Comparison between Culture and Civilisation; Acculturation: Robert Ezra Park's idea of Melting Pot; Cultural Contact, Cultural Shock, Counter Culture and Contra Culture. **Chapter-7**. Global Culture: Globalisation of Values; Cultural Imperialism. **Chapter-8.** Emerging Issues in Culture: Consumer Culture, Children as Consumers, Cyberculture, Netiquette in the age of Digital Living and Digital Divide. **Chapter-9** Socialisation: Theories of Self: Charles Horton Cooley and George Herbert Mead.	
Unit – 3 Social Change	**10**
Chapter -10 Changes due to Industrialisation, Rationalisation, Globalisation, McDonaldization (George Ritzer), Urbanisation and Information Explosion. **Chapter -11**. Consequences of Change: Changing age Structure of Societies: Ageing and Ageism; Technological Impact on Social Life; Changing Environment.	

Berger, P L 1963, Invitation to Sociology: A Humanistic Perspective, Doubleday, Garden City, N.Y

Bruce, Steve, 2018, Sociology: A Very Short Introduction, 2nd edition, Oxford University Press, New York

Bruce, Steve, 2018, Sociology: A Very Short Introduction, 2nd edition, Oxford University Press, New York

Corrigall-Brown, Catherine 2020, Imagining Sociology: An Introduction with Readings, 2nd Edition, Oxford University Press, Canada

Davis, Kingsley 1949, Human Society, Macmillan, Delhi.

Web links:

http://sociological-eye.blogspot.com/Another blog by Randall Collins

https://www.britannica.com/topic/culture

https://www.grin.com/document/453828An article on the impact of digital life on society from a sociological perspective

https://www.pewresearch.org/internet/2019/10/28/5-leading-concerns-about-the-future-of-digital-life/

https://blogs.ed.ac.uk/keywordsindigitalsociology/2020/01/09/the-digital-divide/

Course Articulation Matrix -211151

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	2	1	2	2	1	1	1	1	1
CO2	2	1	2	2	2	2	2	2	2	1	1	1
CO3	1	1	1	2	1	1	2	2	2	1	1	2
Weighted Average	1.3	1.3	1.6	2	1.3	1.6	2	1.6	1.6	1	1	1.3

DSC(2) Syllabus for BA Sociology(Basic and Honors)

Course Code: 211152	**Course Title: DSC (2) Changing Social Institutions in India**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes (COs)

CO1: Identify the new forms are taken by institutions of Family and Marriage & analyze the role played by religion in the modern world.

CO2: Sensitize regarding the conflicting norms of Secularism and living by one's religious beliefs and appreciate the role of education and challenges in making education accessible to all.

CO3:Grasp the opportunities offered by democracy and the threats affecting its faces & undertake micro research work & communicate effectively.

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Course Content

Unit – 1 Family and Marriage	**16**
Chapter 1: Family - Definitions of Family and Household; Changing the structure of family; changes in size and composition **Chapter 2**:Weakening of gender and age stratification - the democratisation of relationships: between spouses, parent-children; step-parenting **Chapter 3**:Changes in caregiving of children and elderly **Chapter 4**: Marriage – Definition; changing patterns of marital relations - cohabitation, separation, divorce and remarriage **Chapter 5**: Changes in age of marriage, marriage decision making and regional variations **Chapter 6:** Decrease in the number of children and voluntary childlessness	
Unit – 2 Religion and Education	**13**
Chapter 7:Definition; secularisation vs resurgence of religion in the modern world, Challenge of diversity - religious freedom vs state laws **Chapter 8**:Education: Definition; education as socialisation; types of education - formal and informal **Chapter 9:**Functional view - manifest and latent functions; Conflict view - education as a tool for perpetuating inequality, Schooling and Life Chances (Max Weber's views) - increasing enrolment ratio **Chapter 10**:Education and Employability - Technology and Digital Divide	
Unit – 3 Economic and Political Institutions	**13**

Chapter 11:Definitions of Economy and Work, Gender stratification in work and its feminization **Chapter 12:**Job insecurity, Unemployment; Outsourcing - opportunities and threats; automation and advancement of technology **Chapter 13**: Definitions of Political Institution, Government, Governance and State **Chapter 14**:Status of Democracy in India, Challenges: Militancy, Fundamentalism, Regionalism **Chapter15**:Globalisation and Social Welfare.	

Books for Reference:

Davis, Kingsley 1949, Human Society, Macmillan, Delhi

Giddens, Anthony and Philip W Sutton, 2013, Sociology, 7th edition, Wiley India Pvt. Ltd. New Delhi

Gouda, M Sateesh, Khan, A G and Hiremath, S L 2019, Spouse Abusal in India: A Regional Scenario, GRIN Publishing, Munich

Weblink:

Weblinks:

https://www.pewresearch.org/fact-tank/2018/06/29/5-facts-about-religion-in-india/

https://www.nytimes.com/2020/02/19/parenting/why-dads-dont-take-parental-leave.html

Course Articulation Matrix-211152

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	2	1	1	2	2	2	2	1	1
CO2	1	2	2	2	1	1	2	2	2	1	1	2
CO3	2	1	1	1	2	2	1	2	1	1	1	2
Weighted Average	1.3	1.6	1.6	1.6	1.3	1.3	1.6	2	1.6	1.3	1	1.6

OE(01) Sociology Syllabus for All Programs (Except Arts)

Course Code: 21OESOC101	**Course Title: OE (1) Indian Society: Continuity & Change**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes (Cos)

CO1:Analyse the nature and direction of change in Indian society, basically from tradition to modernity.

CO2:Examining the changing conditions of the socially excluded group through movements for social justice.

CO3: Evaluate globalization and its impact on Indian society & social values & family relationships.

Course content

Unit – 1 Tradition in Transition	**13**
Chapter 1: The Nature and Direction of Change in Indian Society **Chapter 2**: The Changing Face of Indian Social Institutions: Family, Caste, Polity and Economy **Chapter 3**:The Rural-Urban Divide: Infrastructure, Education, Health and Local Governance	
Unit – 2 Movements for Social Justice	**16**
Chapter 4: A Background View: Role of the Constitution of India and Legislation **Chapter 5**: Backward Classes and Dalit Movements **Chapter 6:**New Social Movements: LGBTQ, Civil Rights, Ecological, Anticorruption Movements **Chapter 7:**Opportunities for Social Mobility for Scheduled Castes, Scheduled Tribes and Women	

Unit – 3 India in the Globalization Era	13
Chapter 8: Globalization and Indian Culture: Impact on Food Habits, Language, Ideas and Life Styles **Chapter 9**:Globalisation and Social Values: Impact on Youth and their World View, Changing Landscape of Love and Marriage, Impact on Familial Relationships and Understanding Others	

Books for Reference:

1) Ahuja, Ram 1993, Indian Social System, Rawat Publications, Jaipur 2) Ambedkar, B R 1948, The Untouchable: Who are they and Why they become Untouchable? Amrith Book Co., New Delhi

3) Beteille, Andre 1965, Caste, Class and Power, University of California Press, Berkeley

Weblinks:

https://www.intechopen.com/chapters/38348 Globalisation and Culture: The Three H Scenarios

https://www.business-standard.com/article/education/india-s-gross-enrolment-in-higher-education-rosemarginally-in-2019-20-121061001249_1.

https://www.wionews.com/south-asia/yoga-indias-new-cultural-tool-of-global-dominance-17104

Course Articulation Matrix – 21OESOC101

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	2	1	2	2	2	1	1	1	1
CO2	1	2	2	1	2	2	2	1	1	2	2	2
CO3	1	2	2	1	2	2	1	2	2	2	1	2
Weighted Average	1	2	2	1.3	1.6	2	1.6	1.6	1.6	1.6	1.3	1.6

OE(01) Sociology Syllabus for All Programs (Except Arts)

Course Code: 21OESOC102	**Course Title: OE (1) Sociology of Everyday Life**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes (COs)

CO1: Analyse the familiar world from a new perspective.

CO2: Analyze & appreciate how our social world is constructed.

CO3: Illustrate the types of Culture, Mass media, Globalization & Cultural diffusion in everyday life.

Course Content

Unit – 1 Introduction	**16**
Chapter 1: Sociology as a study of Social Interaction and its Need. **Chapter 2:** Everyday Life - Meaning; Why Study Everyday Life? (Contributions of Erving. Goffman and Anthony Giddens); Role of Socialisation in establishing habits and practices of action,thinking and feeling. **Chapter 3:** Social Institutions as Established Practices and Customs - Definition and Elements. **Chapter 4:** Challenges and Problems of Everyday Life.	
Unit – 2 Self and Society	**13**
Chapter 5: Definition of Situation (W I Thomas' Principle). **Chapter 6:** The Looking-Glass Self; Relation between Individual and Society. **Chapter 7:** Role of Social Media in Constructing Self and Identity.	
Unit – 3 Culture in Everyday Life	**13**
Chapter 8: Definition of Culture; Types of Culture: High Culture, Popular Culture, Recorded Culture and Lived Culture. **Chapter 9:** Mass Media and Everyday Life.	

Chapter 10: Globalisation and Cultural Diffusion.	

Books for Reference:

1) Berger, P L 1963, Invitation to Sociology: A Humanistic Perspective, Doubleday, Garden City, N.Y
2) Bruce, Steve, 2018, Sociology: A Very Short Introduction, 2nd edition, Oxford University Press,
New York
3) Corrigall-Brown, Catherine 2020, Imagining Sociology: An Introduction with Readings, 2nd Edition, Oxford University Press, Canada

Weblinks

http://www.csun.edu/~hbsoc126/soc1/Charles%20Horton%20Cooley.pdf
https://www.khanacademy.org/test-prep/mcat/individuals-and-society/self-identity/v/charles-cooley-lookingglass-self
https://en.wikisource.org/wiki/Body_Ritual_among_the_NaciremaThis is an excellent article on how a group of people take care of their bodies every day of their life.

Course Articulation Matrix – 21OESOC102

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	1	2	2	2	2	1	1	1	1
CO2	1	2	2	1	1	2	2	2	2	2	2	1
CO3	1	1	2	2	2	1	1	2	1	1	1	1
Weighted Average	1.3	1.6	1.6	1.3	1.6	1.6	1.6	2	1.3	1.3	1.3	1

DSC(3) Syllabus for BA Sociology(Basic and Honors)

Course Code: 211251	**Course Title: DSC(3) Foundations of Sociological Theories**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes (COs)

CO1: Contextualize the social and intellectual background of Classical sociologists.

CO2: Appreciate contemporary classical Sociological thoughts & need for thinking in theoretical terms and concepts.

CO3: Recognise the need for thinking in theoritical terms and concepts.

Course Content

Unit – 1 Auguste Comte and Herbert Spencer	**14**
Chapter 1: Auguste Comte: Intellectual context, Positivism, Law of Three Stages, Classification of Sciences. **Chapter 2:** Herbert Spencer: Theory of Social Evolution, Organic Analogy, Types of Society.	
Unit - 2 Karl Marx and George Simmel	**14**
Chapter 3: Karl Marx: Dialectical Materialism, Economic Determinism, Class Struggle, Alienation **Chapter 4:** Georg Simmel: Formal Sociology, Theory of Sociation, Theory of Conflict.	
Unit - 3 Emile Durkheim and Max Weber	**14**
Chapter 5: Emile Durkheim: Social Facts, Division of Labour in Society, Suicide, Sociology of Religion. **Chapter 6**: Max Weber: Social Action, Ideal Types, Bureaucracy, Types of Authority, Protestant Ethics and Spirit of Capitalism.	

Books for Reference:

1) Abraham, Francis 1984, Modern Sociological Theory, Orient Longman, Delhi
2) Berger, P L 1963, Invitation to Sociology: A Humanistic Perspective, Doubleday, Garden City, N.Y
3) Bruce, Steve, 2018, Sociology: A Very Short Introduction, 2nd edition, Oxford University Press,
New York

Weblinks:

https://anthropology.ua.edu/theory/social-evolutionism/

https://www.britannica.com/biography/Karl-Marx/Character-and-significance

https://www.britannica.com/biography/Emile-Durkheim

Course Articulation Matrix –211251

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	1	2	1	2	2	1	1	2	2
CO2	2	2	2	2	2	1	2	2	2	2	2	2
CO3	2	1	1	1	1	1	2	2	1	1	1	2
Weighted Average	1.6	1.6	1.6	1.3	1.6	1	2	2	1.3	1.3	1.6	2

DSC(4) Syllabus for BA Sociology(Basic and Honors)

Course Code: 211252	**Course Title: DSC(4) Sociology of Rual Life in India**
Course Credits:03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes (COs)

CO1: Evaluate the myth and realities of village India constructed by western schools and the changes in the land tenure system and the consequences.

CO2: Acquire knowledge about Rural caste,gender-related issues and consequences of the virtual market.

CO3: Make an informed analysis of various development programs and challenges encountered.

Course Content

Unit – 1: Rural and Agrarian Social Structure	**16**
Chapter 1: Social Construction of Rural Societies: Myth and Reality (M N Srinivas) **Chapter 2:** Agrarian Social Structure: Land Tenure Systems (Colonial Period); Post-Independence Indian Land Reform Laws **Chapter 3:** Commercialisation of Agriculture, Commodification of Land	
Unit – 2: Themes of Rural Society in India	**14**
Chapter 4: Rural Caste and Class Structure **Chapter 5:** Gender and Agrarian Relations **Chapter 6:** Impact of Panchayat Raj System and Rural Politics **Chapter 7:** Actors in Market - Weekly Fairs, Trading Castes, Emerging Trading Classes and Key Role of Intermediaries	

Chapter 8: Emergence of Online and Virtual Commodity Markets - Features and Impact on Traditional Sellers and Buyers.	
Unit – 3: Rural Development	**12**
Chapter 9: Induced Intervention: PURA, MGNREGA, Swach Bharat Abhiyan, Akshara Dasoha, Water and Land Development Efforts **Chapter 10:** Challenges to Sustainable Rural Development: Casteism, Factional Politics, Natural Calamities (Droughts and Floods), Utilisation of Water, Fertilisers and Pesticides	

Books for Reference:

1) Desai, A R 1977, Rural Sociology in India, Popular Prakashan, Bombay
2) Doshi, S L and Jain P C 1999, Rural Sociology, Rawat Publications, Jaipur
3) Gouda, M Sateesh, Khan, A G and Hiremath, S L 2019, Spouse Abusal in India: A Regional Scenario, GRIN Publishing, Munich
4) Indira R 2011, Themes in Sociology of Indian Education, Sage Publications, Delhi

Weblinks:

https://data.gov.in/catalogsv2?format=json&offset=0&limit=9&filters%5Bfield_sector%3Aname%5D=Rural&sort%5Bogpl_module_domain_name%5D=asc&sort%5Bcreated%5D=desc *Website of Government of India related to data on rural development programmes and their beneficiaries*

https://www.india.gov.in/topics/rural Government of India portal on Rural areas

Course Articulation Matrix –211252

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	2	2	2	1	2	2	2	1	2
CO2	1	2	2	1	1	1	2	2	2	2	2	1
CO3	1	1	1	2	2	2	1	1	1	2	2	2
Weighted Average	1.3	1.3	1.6	1.6	1.6	1.6	1.3	1.6	1.6	2	1.6	1.6

OE(02) Sociology Syllabus for All Programs (Except Arts)

Course Code: 21OESOC201	**Course Title: OE (2) Social Development In India**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes (COs)

CO1:Distinguish between growth and development.

CO2:Appreciate the importance of the Social component of development.

CO3:Appreciate the need for sustainable and inclusive human development.

Course Content

Unit – 1 Social Change and Development	**16**
Chapter 1: Rethinking Development: From economic development to social development and Human Development Index (HDI). **Chapter 2:** Development: Concept - changes in values and social relations as development; S.C. Dube's contributions; Importance of Social Development. **Chapter 3**: Indian thinking about Social Development - Swami Vivekananda, Ravindranath Tagore, M.K. Gandhi and Dr B. R. Ambedkar.	
Unit - 2. Components of Social Development	**13**
Chapter 4: Political Freedom, Economic Facilities. **Chapter 5:** Social Opportunities, Transparency, Security.	
Unit - 3 Challenges to Social Development	**13**
Chapter 6: Sustainable and Inclusive Development, Environmental Sustainability. **Chapter 7:** Responsible Private Corporations, Redressing Regional Imbalance, Harnessing Demographic Dividend.	

Books for Reference:

1) So, Alvin Y 1990 Social Change and Development. Sage Publication.
2) Sen, Amartya 1999 Development as Freedom, Oxford University Press, Delhi
3) Rai, Hirendranath 2013 Economic Thinking of Swami Vivekananda, Mahatma Gandhi and Ravindranath Tagore: Advaita Ashrama Calcutta
4) Dayal, P 2006 Gandhian Theory of Reconstruction. Atlantic

Weblinks:

https://blogs.lse.ac.uk/southasia/2016/01/13/5689/ Top 100 economic and development challenges for India
220016
http://dotcue.net/swtn/upload_newfiles/2.SocialDevelopment-TheConcept.pdf
https://uk.sagepub.com/sites/default/files/upm-assets/57961_book_item_57961.pdf Defining Social Development

Course Articulation Matrix – 21OESOC201

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	2	2	2	1	2	2	1
CO2	2	1	2	2	2	2	2	1	2	1	1	2
CO3	1	2	1	1	1	1	1	2	2	2	2	1
Weighted Average	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.3

OE(02) Sociology Syllabus for All Programs (Except Arts)

Course Code: 21OESOC202	**Course Title: OE (02) Society Through Gender Lens**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes (COs)

CO1: Realize the role of socialisation as a constructor of gender roles and status.

CO2: Appreciate the role of defining one's self-identity in terms of gender.

CO3: Examine the gender bias and discrimination present in everyday social structure & take informed decisions about addressing gender justice issues.

Course Content

Unit – 1 Social Construction of Gender	**14**
Chapter 1: Gender and Sex, Patriarchy, Gender Relations, Gender Discrimination, Gender ,Division of Labour. **Chapter 2:**Gender Equality, Gender Neutrality, Androgyny and Gender Sensitivity. **Chapter 3:** Gender Representation of Women and Third Gender in Indian Social Institutions.	
Unit - 2 Gender Representation and Violence	**14**
Chapter 4: Mass Media and Politics. **Chapter 5:** Education, Employment and Health. **Chapter 6:** Domestic Violence, Sexual Harassment at Work Place, Dowry and Rape, Dishonour Killing, Cyber Crime.	
Unit - 3 Addressing Gender Justice	**14**
Chapter 7: The Convention on the Elimination of All Forms of Discrimination Against Women(CEDAW) **Chapter 8**: 73rd and 74th Constitutional Amendment and Women's Empowerment **Chapter 9:** Right to self-determination of gender - Supreme Court of India's Judgment in NLSA Vs Union of India and others (Writ Petition (Civil) No 400 of 2012)	

Books for Reference:

1) Giddens, Anthony and Philip W Sutton, 2013, Sociology, 7th edition, Wiley India Pvt. Ltd. New
Delhi
2) Gouda, M Sateesh, Khan, A G and Hiremath, S L 2019, Spouse Abusal in India: A Regional Scenario, GRIN Publishing, Munich
3) Harlambos, M and R M Heald, 1980, Sociology: Themes and Perspectives, Oxford University Press,
Delhi

Web Links:

https://web.stanford.edu/~eckert/PDF/Chap1.pdf An Introduction to Gender
https://hbr.org/2019/06/tackling-the-underrepresentation-of-women-in-media
https://en.wikipedia.org/wiki/National_Legal_Services_Authority_v._Union_of_India

Course Articulation Matrix – 21OESOC202

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	2	2	1	2	2	2	2	1	2
CO2	2	2	2	2	1	2	1	2	1	2	2	1
CO3	2	1	1	1	2	2	1	2	1	2	1	2
Weighted Average	1.6	1.6	1.6	1.6	1.6	1.6	1.3	2	1.3	2	1.3	1.6

Continuous Formative Evaluation/Internal Assessment

Total marks for each course shall be based on continuous assessments and semester-end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively.

	THEORY
Total Marks	**100**
Continuous Assessment – 1 (C1)	**20**
Continuous Assessment – 2 (C2)	**20**
Semester End Examination (C3)	**60**

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of the assessment is for 20% marks. This shall be based on tests, assignments, seminars, case studies, fieldwork, project work etc. This assessment and score process should be completed after completing 50% of the syllabus of the course and within 45 working days of the semester program.

b) The second component (C2) of the assessment is for 20% marks. This shall be based on the test, assignment, seminar, case study, fieldwork, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on the completion of the remaining 50% of the syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester-end examination shall be conducted by the college for each course. This forms the third and final component of the assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on the scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct the

special test for a such candidate on the date fixed by the concerned teacher but before the commencement of the concerned semester-end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	**20**		**20**
Seminar/ Assignment/ Field Visits/ /Quiz etc.		**20**	**20**
Total	**20**	**20**	**40**

- Conduct of Tests, Seminars, Case studies/Assignments etc., can be either in the C1 or in the C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct tests/seminars/case studies etc., The students should be informed about the modalities well in advance. The evaluated course assignments during component I (C1) and component II (C2) of the assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before the commencement of the semester-end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment.

Question Paper Pattern (DSC and OE)
B.A. Examination Month /Year
(Scheme NEP) Sociology
Title of the Paper

Time:2 Hrs 30 mins **Max Marks:60**

Part-A

I. Answer all Questions: **5 X 2 = 10**

1.

2.

3.

4.

5.

Part-B

II. Answer any Four Questions: **4 X 5 = 20**

6.

7.

8.

9.

10.

11.

Part-C

III. Answer any Three Questions: **3X 10 = 30**

12.

13.

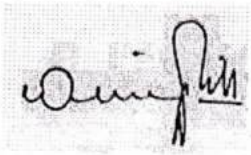
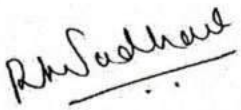
14.

15.

16.

Department of Sociology

B.A. Sociology online BoS Meeting for I & II Sem held on 02.12.2021

Sl. No.	Name	Designation	Signature
1	**Radha M.S** HoD of Sociology SBRR Mahajana First Grade College (Autonomous) Jayalakashmipuram, Mysuru radhamfgc@gmail.com 9880473042	Chairman	
2	**Dr. Vinay Rajath** Chair Person & Professor Department of Sociology University of Mangalore vinayrajath@gmail.com 9448815520	Member	
3	**Dr. Rekha Jadhav** Associate Professor Department of Sociology Mahajana College, Mysuru rekhakushi6666@gmail.com 9986713964	Member	

SBRR Mahajana First Grade College (Autonomous), Mysuru

Mahajana Education Society(R.)
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BOARD OF STUDIES (BoS)

DEPARTMENT OF SOCIOLOGY

UG	✓
PG	

NEP Syllabi for III & IV Semester B A. SOCIOLOGY
2022-23

Department of Sociology

Motto:

Globalizing through the development of Intellectual Culture

Vision:

Building Sociological Imagination

Mission:

Sociological Programmes provide students with a broad and actionable education, applicable to a variety of career paths that includes research, writing and critical thinking skills.

Program Outcomes (POs) for Bachelor of Arts

PO 1: Domain Knowledge: Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of the concerned domain.

PO 2: Problem Analysis: This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.

PO 3: Design & Development of Solutions: Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Infographics and Approaches for arriving at relevant and desirable solutions.

PO 4: Research & Investigation: Knowledge and application of "Research Methods" to investigate domain-specific problems and derive scientific conclusions through the testing of Hypotheses and relevant findings empirically.

PO 5: Usage of Modern Tools and Techniques: Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.

PO 6: Social Sciences & Society – Promotes domain-specific literacy to illuminate the significance of each discipline and its applicability to the well-being of Society.

PO 7: **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channel the initiatives towards sustainability.

PO 8: Moral and Ethical Values: Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards the attainment of harmony and co-existence.

PO 9: **Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in diversified and multidisciplinary areas.

PO 10: **Communication:** Demonstrates Competency in comprehending and conceptualizing discipline-specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11: **Economics and Project Management:** Understand the Economic Concept in the context of a specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.

PO 12: Lifelong Learning: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

List of BoS Members

Sl no	Category	Name & Designation	Address for Communication	e-Mail & Mobile No.
01	Chairperson	Radha MS Asst. Professor	Dept of Sociology SBRR Mahajana FGC, Mysuru	radhamfgc@gmail.com
02	Experts from other University	Prof.RameGowda Chairman	DoS in Sociology Kuvempu University Shankargatta, Shivamogga	aramegowda@gmail.com
03		K.Rangappa Associate Professor	HoD of Sociology Field Marshall KM Cariappa First Grade College	triberanga3@gmail.com
04	Vice Chancellor Nominee	Dr Yashoda Chairperson	Dept of Sociology University of Musuru, Myruru	yashodamahesh678@gmail.com
05	Alumni	Dr Sowmya Kumar Associate Professor	DoS in Sociology Government First Grade College, KR Nagar	sociologychest@gmail.com

Objectives: Sociology

1. Recognize different types of stratification and mobility.
2. It identifies the different sources of stratification in society and explains them within the framework of sociological theories.
3. It also focuses on the role of different agents of mobility and how it has affected the caste system in India
4. It helps to appreciate different theoretical approaches to understanding urban social life
5. and discuss social issues related to urbanisation and urban social life.
6. It draws attention to the potential issues involved in the tourism industry like planning, concerns about sustainable development and its effect on the environment. The course also focuses on types of tourism.

Year-wise Programme Structure
Discipline Specific Courses (DSC) and Open Electives (OE)

Course, Type, Code & Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		EXAM		
		L	T/P	L: T:P	C1	C2	C3		
Sociology III Sem									
DSC(5) 221351	Social Stratification and Mobility	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
DSC(6) 221352	Sociology of Urban Life in India	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
OE(3)	Sociology of Tourism Management 22OESOC301	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
	Sociology of Youth 22OESOC302	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
Open Elective: Anyone to be opted									
Sociology IV Sem									
DSC(7) 221451	Sociology of Marginalized Groups	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
DSC(8) 221452	Population and Society	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
OE(4)	Sociology of Leisure 22OESOC401	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
	Sociology of Food Culture 22OESOC402	3	0	3:0:0	20	20	60	$2\frac{1}{2}$Hrs	100

Open Elective: Anyone to be opted

DSC(5) Syllabus for BA. Sociology (Basic and Honors)

Course Code: 221351	**Course Title: DSC (5) Social Stratification and Mobility**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes (COs)

CO1: Inculcate the facets of the nature and role of Social stratification.

CO2:Recognize different types of stratification and mobility.

CO3:Critically understand and analyse different theories of Social stratification.

Course Content

Unit – 1 Stratification - Features and Forms	**14**
Chapter No. 1. Basic characteristics of Stratification: Melvin M Tumin. **Chapter No.2.** Forms of Social Stratification - Caste, Class, Estate. **Chapter No.3.** Dimensions of Social Stratification - Income, Wealth, Power, Occupational Prestige, Schooling.	
Unit – 2 Perspectives on Stratification	**14**
Chapter No. 4. Functional Theory: Kingsley Davis and W E Moore's perspective and critique by Melvin M Tumin. **Chapter No.5.** Karl Marx's Theory: Class and Social Change. **Chapter No.6.** Weber's Theory: Class, Status and Power.	
Unit – 3 Social Mobility	**14**
Chapter No.7. Meaning of social mobility; forms of social mobility: horizontal and vertical, intergenerational and intragenerational mobility. **Chapter No.8.** Role of Education and Profession in the Rise of Middle Class. **Chapter No.9.** Mobility in Caste in Contemporary India.	

Books for Reference:

Dirks, Nicholas B 2001, Castes of Mind: Colonialism and the Making of Modern India, Princeton University Press, Princeton

Grusky, Nicholas B and Jasmine Hill, 2018 Inequality in the 21st Century, Routledge, New York

Hess, Andreas, 2001, Concepts of Social Stratification, Palgrave, New York

Jodhka, Surnider S, 2018, Caste in Contemporary India, 2nd Edition, Routledge, London

Web links:

https://www.britannica.com/topic/sociology/Social-stratification

https://www.epw.in/system/files/pdf/1964_16/34wright_mills_and_the_power_elite.pdf

https://www.encyclopedia.com/history/encyclopedias-almanacs-transcripts-and-maps/rise-middle-class

Course Articulation Matrix-221351

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	1	1	2	2	2	1	2	2	2
CO2	2	1	1	1	1	2	2	1	1	2	2	1
CO3	1	1	1	1	1	1	1	1	2	1	2	1
Weighted Average	1.6	1.3	1	1	1	1.6	1.6	1.3	1.3	1.6	2	1.3

DSC(6) Syllabusfor BA. Sociology (Basic Honors)

Course Code: 221352	**Course Title: DSC (6) Sociology of Urban Life in India**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1:.Illustrate the basic concepts of Urban Sociology and different types of society.

CO2:Examine the theoretical issues related to the urban society.

CO3:Critically evaluate Urban Policies.

Course Content

Unit – 1 Introducing Urban Sociology	**14**
Chapter No. 1. Meaning of Urban Sociology and its importance; a brief history of Urban Sociology in India and world. **Chapter No.2.** Meaning of Urban, Urbanism and the City; Types of City: Metropolitan, Megacity and Global City. **Chapter No.3.** Urbanization and its Challenges: Rural-Urban Continuum, Suburbs, Urban Fringe, Urban Sprawl, Edge Cities.	
Unit – 2 Perspectives on Urban Society	**14**
Chapter No. 4. Ecological Theory (Chicago School). **Chapter No.5.** World and Global Cities (Saskia Sassen). **Chapter No.6** Spaces of Flows (Manuel Castells), Cities in the South.	
Unit – 3 Urban Policy	**14**
Chapter No.7. Inequalities: Caste, Class, Gated Communities and Social Exclusion. **Chapter No.8.** Urban Governance: 74th Amendment to the Indian Constitution, Urban Development and Planning. **Chapter No.9**. Urban Policy: Urbanization and Environmental Concerns, Smart cities.	

Books for Reference:

Flanagan, William G 2010, Urban Sociology: Images and Structures, 5th Edition, bowman and Littlefield Publishers Inc, New York.
Gottdiener, Mark H & Others, 2015, The Urban Sociology, Routledge, New York .
Hannigan, John and Grey Richards (Ed) 2017 The Sage Handbook of New Urban Studies, Sage London.

Weblinks:

https://www.britannica.com/topic/urban-sprawl
https://www.dhi.ac.uk/san/waysofbeing/data/communities-murphy-castells-1999b.pdf Grassrooting the Space of Flows

Course Articulation Matrix –221352

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	1	1	1	2	2	1	2	1	2	1
CO2	1	2	3	2	3	1	1	1	1	1	3	1
CO3	1	3	2	3	2	1	2	2	1	1	2	2
Weighted Average	1	2	2	2	2	1.3	1.6	1.3	1.3	1	2.3	1.3

OE(03) Sociology Syllabus for All Programs (Except Arts)

Course Code:22OESOC301	**Course Title: OE (3) Sociology Of Tourism Management**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1:Explicate the relationship between Tourism, Culture and Cultural Heritage.

CO2:Determine the social, cultural and economic impact of tourism on local communities.

CO3: Acknowledge the principles of Tourism management.

Course Content

Unit – 1 Sociology, Tourism, Tourists	15
Chapter No. 1. Definitions of Sociology, Culture, Tourism, Tourists, Tourist Gaze; Relation between Tourism, Leisure and Recreation; Sociology of Tourism. **Chapter No.2.** Types of Tourism: Cultural, Heritage, Medical, Food, Sports and Eco-Tourism. **Chapter No.3.** Tourism and Locals; Hosts and Guests: Mutual Impact.	
Unit – 2 Tourism System	**11**
Chapter No. 4. Development and Structure of the Tourist System - Motivation and Role of Tourist. **Chapter No.5.** Impact of Tourism on Host Place: Social, Economic, Climate and Environmental. **Chapter No.6.** Sustainable Tourism: Definitions of Sustainable and Sustainable Tourism; Sustainability of Tourism.	

Unit – 3 Tourism Management	16
Chapter No.7. Demand for Tourism at Individual and Market level; Tourism Consumer Behaviour: Roles and Decision Making Process; Accommodation: Definition and Management of Commercial Accommodation; Transportation as Tourist Product; Role of Intermediaries. **Chapter No.8.** Marketing for Tourism: Definition; Difference between Marketing and Selling; Tourism as a Service Industry: Product, Price, Promotion and Place. **Chapter No.9.** Information Technology and Tourism: ICT as a Business Tool; e-Tourism.	

Books for Reference:

Burns, Peter M 1999, An Introduction to Tourism and Anthropology, Routledge, London
Fletcher, John & others, 2018, Tourism: Principles and Practice, 6th Edition, Pearson, UK
Nash, Dennis 2007, The Study of Tourism: Anthropological and Sociological Beginnings, Elsevier, Amsterdam

Weblinks:

https://iarconsortium.org/articles/

http://www.drbrambedkarcollege.ac.in/sites/default/ciles/ Impact%20of%20Tourism_pdf.pdf

https://repository.up.ac.za/bitstream/handle/2263/24684/02chapters3-4.pdf?sequence=3

Course Articulation Matrix – 22OESOC301

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	2	2	2	1	2	2	1	2	2	2
CO2	2	1	1	1	1	2	3	2	2	2	2	2
CO3	2	2	3	3	3	2	3	2	2	2	2	2
Weighted Average	2	2	2	2	2	1.6	2.6	2	1.6	2	2	2

OE(03) Sociology Syllabus for All Programs (Except Arts)

Course Code:22OESOC302	**Course Title: OE (3) S ociology of Youth**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42Hrs	**Formative Assessment Marks: 40**
Exam Duration: 2 $\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1: Recognize and explain how sociologists conceptualize and study youth and youthhood
CO2: Analyse how youth evolve in the context of social, economic and cultural settings
CO3:Examine concerns and problems of youth

Course Content

Unit-1:Age Groups and Social Structure	14
Chapter -1:Age Differentiation, Age Group, Age Sets, Problems of Generations; Cultural Lag(W F Ogburn);Structural Lag(Riley) **Chapter-2**:Youth Cultures, Subcultures, CounterCulture, ContraCulture. **Chapter-3:**Response of Youth to Caste and Class Inequalities.	
Unit-2: Youth and Society	**14**
Chapter 4: Youth Leisure, Music. **Chapter 5**: Globalization of Youth Culture; Marketing Youth Culture. **Chapter-6**:Youth, Media and Society.	
Unit-3:Youth and Social Concern	**14**
Chapter-7:Youth, Protest and violence: Social, Political and Economic Issues. **Chapter-8:**Youth, Peer Group and Drug Culture **Chapter-9**:Youth, Nationalism and Globalization	

Books for Reference:

Dannie Kjeldgaard, Søren Askegaard, The Glocalization of Youth Culture: The Global Youth Segment as Structures of Common Difference, *Journal of Consumer Research*, Volume 33, Issue 2, September 2006, Pages 231–247, https://doi.org/10.1086/506304
Edmunds, June; Turner, Bryan S. (2005). "Global Generations: Social Change in the

Twentieth Century". *British Journal of Sociology*. 56 (4): 559–577. doi:10.1111/j.1468-4446.2005.00083

Web Links:

https://www.encyclopedia.com/social-sciences/applied-and-social-sciences-magazines/age-differentiation

https://www.un.org/youthenvoy/leisure-time-activities/

https://www.loc.gov/collections/civil-rights-history-project/articles-and-essays/youth-in- the-civil-rights-movement/

Course Articulation Matrix – 22OESOC302

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	1	2	3	2	2	2	2	2	2
CO2	2	3	3	2	1	2	3	3	3	3	3	3
CO3	3	1	1	3	3	1	1	1	1	1	1	1
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

DSC(7) Syllabusfor BA. Sociology (Basic Honors)

Course Code: 221451	**Course Title: DSC (7)Sociology of Marginalized Groups**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: 2 $\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1: Identify the knowledge of marginalization and marginalized groups in India
CO2: Examine the impact of powerlessness in social life
CO3: Evaluate the ability to participate and critically view efforts undertaken to address inequalities

Course Content

Unit – 1 Introduction	**16**
Chapter No. 1. Marginalization: Meaning and Nature; Types of Marginalization: Social, Political, Economic; Relationship between Marginalization and Social Exclusion. **Chapter No.2.** Causes of Marginalization; Marginalized Groups: Caste, Gender, People with Disabilities, Minorities, Tribes and Elderly. **Chapter No.3.** Socio-economic Indices of Marginalization: Poverty, Relative Deprivation, Exploitation, Discrimination, Educational Backwardness, Inequality and Untouchability.	
Unit – 2 Marginalization and Affirmative Action	**14**
Chapter No. 4. Views of Dr B R Ambedkar and Affirmative Principle in the Constitution of India (Constitutional Provisions). **Chapter No.5.** Scheduled Castes, Scheduled Tribes and Status of Women in these groups; Status of Transgenders. **Chapter No.6.** Status of Landless Agricultural Labourers, Status of Land Ownership among Scheduled Caste and Scheduled Tribes.	

Unit – 3 Marginalized Groups and Social Change	12
Chapter No.7. Social Mobility among Marginalized Groups: Education, Employment, Political Participation, Conversion, Migration. **Chapter No.8.** Challenges of Privatization and Response by Marginalized Groups. **Chapter No.9.** Social Justice in the context of Globalization	

Books for Reference:

Beteille, Andre 19922, The Backward Classes in Contemporary India, Oxford University Press, Delhi
Charley, S R and G K Karanth 1998 (Eds) Challenging Untouchability, Sage India, Delhi
Gore, M S 1993 The Social Context of an Ideology: Ambedkar's Political and Social Thought, Sage, New Delhi
Judge, Paramjit S (Ed) 2013 Towards Sociology of Dalits, Readings in Indian Sociology - Voume 1, Sage, New Delhi

Web Links:

https://medium.com/@jacobthanni/theories-and-practices-of-exclusion-1-43904f64e26b

https://www.researchgate.net/publication/312495996_Dr_BR_Ambedkar_and_his_interpretations_on_Social_Exclusion_as_a_Historian

https://www.ijser.org/paper/Ambedkars-Notion-of-Social-Justice-A-Different-Perspective.html

Course Articulation Matrix –221451

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	1	2	3	2	2	2	2	2	2
CO2	2	3	3	2	1	2	3	3	3	3	3	3
CO3	3	1	1	3	3	1	1	1	1	1	1	1
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

DSC(8) Syllabusfor BA. Sociology (Basic Honors)

Course Code: 221452	**Course Title: DSC (8) Population and Society**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: 2 $\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1: Analyse the basic concepts of population studies
CO2: Identify the dynamics of the population from sociological perspectives & the problems around India's population
CO3: Critically analyze the population policies of India

Course Content

Unit – 1 Introduction	**14**
Chapter No. 1. Relationship between society and population. **Chapter No.2.**Global Population Trends: role of fertility, mortality and migration; Power of Doubling. **Chapter No.3.** Age and Sex Composition in India and its Impact; Demographic Dividend.	
Unit – 2 Sources of Demographic Data	**14**
Chapter No. 4. Population Census: Uses and Limitations; Indian Censuses. **Chapter No.5.** Vital Registration System . **Chapter No.6.** National Sample Survey; Sample Registration System; National Family Health Surveys (NFHS).	
Unit – 3 Population Theories and Policy	**14**
Chapter No.7. Population Theories: Malthusian Theory, Optimum Theory of Population and Demographic Transition Theory. **Chapter No.8.** Need of Population Policy; Millennium Development Goals and Sustainable Development Goals. **Chapter No.9.** Population Policy of India; Programmes and their Evaluation	

Books for Reference:

Agarwal, S.N. (1989) Population Studies with Special Reference to India. New Delhi, Lok Surjeet Publication.
Ahuja, Ram. (1992) Social problems in India. Jaipur, Rawat Publications.
Bhende, A. A., and Kanitkar, T. (2019) Principles of population studies. Bombay, Himalaya Pub. House.
Bogue, D. J. (1969) Principles of demography. New York: Wiley.

Web Links:

https://www.nap.edu/read/9543/chapter/6
http://www.demographie.net/demographicdata/
https://unstats.un.org/unsd/demog/docs/symposium_03.htm
https://www.un.org/en/development/desa/population/publications/pdf/policy/WPP2015/WPP2015_Highlights.pdf
https://www.cairn-int.info/article-E_ETU_4175_0441--the-role-of-population-policies.htm

Course Articulation Matrix –221452

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	1	2	3	2	2	2	2	2	2
CO2	2	3	3	2	1	2	3	3	3	3	3	3
CO3	3	1	1	3	3	1	1	1	1	1	1	1
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

OE(04) Sociology Syllabus for All Programs (Except Arts)

Course Code:22OESOC401	**Course Title: OE (4) Sociology of Leisure**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: 2 $\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1: Describe the concept of Leisure, associated terms and types
CO2: Analyse the relationship between Leisure and stratification
CO3:. Examine the Impact of the commoditization of leisure

Course Content

Unit-1:Introduction	**14**
Chapter-1:Definition of Leisure and its attributes; the need for the study of leisure as a social activity. **Chapter-2**:Leisure, Recreation, Play, Pleasure and Leisure Identity; Leisure, Work and Post Work. **Chapter-3:**Types of Leisure: Serious, Casual, Postmodern, Therapeutic.	
Unit-2: Constraints on Leisure Participation	**14**
Chapter 4: Class Inequality and Exclusion from Leisure Participation. **Chapter 5**: Leisure Participation and Gender Relations- Leisure and Beauty System. **Chapter-6**:Leisure Participation, Age and Disability.	
Unit-3: Commodification of Leisure	**14**
Chapter-7:Cinema, OTTs, and Reality TV. **Chapter 8**: Leisure and Sports- Adding Leisurevalue like branded goods(Sony Walkman, iPod, Nike, Coke etc); Malls as areas of leisure. **Chapter-9**:Social Media as leisure Activity- Role in Identity building.	

Books for Reference:

1. Best, Shaun 2010, Leisure Studies: Themes and Perspectives, Sage, New Delhi
2. Harris, David 2005, Key Concepts in Leisure Studies, Sage, New Delhi
3. Rojek, Chris 2000 Leisure and Culture, Palgrame Macmillan, New York
4. Rojek, Chris and others 2006, A Handbook of Leisure Studies, Palgrave Macmillan, New York

Web Links:

https://www.encyclopedia.com/social-sciences/dictionaries-thesauruses-pictures-and-press-releases/leisure-sociological-studies
https://www.tandfonline.com/doi/abs/10.1080/01490407809512889?journalCode=ulsc
20 Social Differences in Leisure Behaviour
https://inequalitiesblog.wordpress.com/
https://www.researchgate.net/publication/
343473867_A_Study_OTT_Viewership_in_Lockdown_and_Viewer%27s_Dynamic_Watching_Ex

Course Articulation Matrix – 22OESOC401

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	3	2	2	2	2	2	2	1
CO2	1	2	3	3	2	2	2	2	3	3	3	1
CO3	1	2	2	3	2	2	2	2	1	1	1	1
Weighted Average	1.3	2	2.3	2.3	2.3	2	2	2	2	2	2	1

OE(04) Sociology Syllabus for All Programs (Except Arts)

Course Code: 22OESOC402	**Course Title: OE (4) Sociology of Food Culture**
Course Credits: 03(3:0:0)	**Hours of Teaching/Week: 03**
Total Contact Hours: 42 Hrs	**Formative Assessment Marks: 40**
Exam Duration: 2 $\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1: Appreciate the complex relations between food, individuals and society
CO2: Identify the evolution of food production and consumption from household to industry
CO3:Critically Understand the relationship between food and risk society

Course Content

Unit-1: Introduction	**14**
Chapter-1: Sociological nature of Food and Eating; Sacred and Taboo Food, Sociality and Social Change. **Chapter 2**: Determinants of Food Consumption- Types of Food; Vegetarian, Non-Vegetarian, Vegan and Flexitarian. **Chapter-3**:Local Food Culture and Taste for Exotic.	
Unit-2: Food from Domestic to Industry	**14**
Chapter-4: Industrailization of Food Production and Distribution. **Chapter 5:** HotelsRestuarants and Catering Sectors. **Chapter 6**: Cooking as duty and cooking for self-pleasure.	
Unit-3:Food and Risk Society	**14**
Chapter-7:Diet and Body: Social Appearance and Beauty. **Chapter-8**:Global Overview: Consumption: Pattern and Reasons; overeating, Undereating and Hunger. **Chapter 9**:GM FoodS, Organic Foods and Modern food practices as a risk factor.	

Books for Reference:

Beardsworth, Alan and Teresa Keil, 1997, Sociology on the Menu: An invitation to the study of food and society, Routledge, London
Beck, Ulrich 1992, Risk Society: Towards a New Modernity, Sage Publications Carolan, Michael, 2012, The Sociology of Food and Agriculture, Routledge, London Food Marketing to Children and Youth, 2006, Institute of Medicine, USA
German, John and Lauren Williams (Eds) 2017, A Sociology of Food and Nutrition: The social appetite, Oxford University Press, Australia

Web Links:

https://apps.who.int/iris/bitstream/handle/10665/330447/WH-1996-Mar-Apr-p10-12-eng.pdf?sequence=1 Food Beliefs and Taboos.
https://journals.sagepub.com/doi/pdf/10.1177/1440783310384448 An article on A Sociology of Food and Eating: Why Now?
https://www.foodsystemprimer.org/food-production/industrialization-of-agriculture/
Wood, R.C. (1990), "Sociology, Gender, Food Consumption and the Hospitality Industry", British Food Journal, Vol. 92 No. 6, pp. 3-5. https://doi.org/ 10.1108/00070709010001861

Course Articulation Matrix – 22OESOC402

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	2	3	2	1	2	2	1	1	3
CO2	2	3	1	3	2	3	2	3	2	2	2	2
CO3	2	3	2	1	1	3	3	1	3	3	3	1
Weighted Average	1.6	2.6	1.6	2	2	2.6	2	2	2.3	2	2	2

Continuous Formative Evaluation/Internal Assessment

Total marks for each course shall be based on continuous assessments and semester-end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively.

	THEORY
Total Marks	**100**
Continuous Assessment – 1 (C1)	**20**
Continuous Assessment – 2 (C2)	**20**
Semester End Examination (C3)	**60**

Evaluation Process of IA Marks shall be as follows:

a) The first component (C1) of the assessment is for 20% marks. This shall be based on tests, assignments, seminars, case studies, fieldwork, project work etc. This assessment and score process should be completed after completing 50% of the syllabus of the course and within 45 working days of the semester program.

b) The second component (C2) of the assessment is for 20% marks. This shall be based on the test, assignment, seminar, case study, fieldwork, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on the completion of the remaining 50% of the syllabus of the course of the semester.

c) During the 17th – 19th week of the semester, a semester-end examination shall be conducted by the college for each course. This forms the third and final component of the assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on the scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct the special test for a such candidate on the date fixed by the concerned teacher but before the commencement of the concerned semester-end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed by the concerned department at the time of conducting tests/assignment/project work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	**20**		**20**
Seminar/ Assignment/ Field Visits/ /Quiz etc.		**20**	**20**
Total	**20**	**20**	**40**

- Conduct of Tests, Seminars, Case studies/Assignments etc., can be either in the C1 or in the C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct tests/seminars/case studies etc., The students should be informed about the modalities well in advance. The evaluated course assignments during component I (C1) and component II (C2) of the assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before the commencement of the semester-end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.

g) The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.

h) The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.

i) There shall be no minimum in respect of internal assessment marks.

j) Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment marks.

Question Paper Pattern (DSC and OE)
B.A. Examination Month /Year
(Scheme NEP) Sociology
Title of the Paper

Time:2 Hrs 30 mins **Max Marks:60**

Part-A

I. Answer all Questions: **5 X 2 = 10**

1.

2.

3.

4.

5.

Part-B

II. Answer any Four Questions: **4 X 5 = 20**

6.

7.

8.

9.

10.

11.

Part-C

III. Answer any Three Questions: **3X 10 = 30**

12.

13.

14.

15.

16.

Mahajana Education Society (R)
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SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012, Karnataka, INDIA
Affiliated to University of Mysore
Re-accredited by NAAC with 'A' Grade, College with Potential for Excellence

DEPARTMENT OF SOCIOLOGY

B.A. Sociology BoS meeting for I and II semester Syllabi modification and III and IV Sem NEP held on 01.09.2022.

Sl. No.	Name	Designation	Signature
01	Smt. Radha M S	Chairperson	
02	Dr. Yashoda	Member	1/9/22
03	Dr. A. Ramegowda	Member	1/9/22
04	Dr. Sowmya Kumar	Member	1/9
05	Sri Rangappa	Member	

Mahajana Education Society(R.)
Education to Excel

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)

Jayalakshmipuram, Mysuru – 570 012
Affiliated to University of Mysore Re-accredited by NAAC with 'A' Grade
College with Potential for Excellence

BOARD OF STUDIES (BoS)

DEPARTMENT OF SOCIOLOGY

UG	✓
PG	

NEP Syllabi for V & VI Semester BA SOCIOLOGY 2023-24

Department of Sociology

Motto:

Globalizing through the development
of Intellectual Culture

Vision:

Building Sociological Imagination

Mission:

Sociological Programmes provide students with a broad and actionable education, applicable to a variety of career paths that includes research, writing and critical thinking skills.

Program Outcomes (POs) for Bachelor of Arts

PO 1: Domain Knowledge: Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of the concerned domain.

PO 2: Problem Analysis: This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.

PO 3:Design& Development of Solutions: Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Infographics and Approaches for arriving at relevant and desirable solutions.

PO 4:Research& Investigation: Knowledge and application of "Research Methods" to investigate domain-specific problems and derive scientific conclusions through the testing of Hypotheses and relevant findings empirically.

PO5:Usage of Modern Tools and Techniques: Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.

PO6: Social Sciences & Society – Promotes domain-specific literacy to illuminate the significance of each discipline and its applicability to the well-being of Society.

PO7: **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channel the initiatives towards sustainability.

PO8:Moral and Ethical Values: Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards the attainment of harmony and co-existence.

PO9: **Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in diversified and multidisciplinary areas.

PO 10: **Communication:** Demonstrates Competency in comprehending and conceptualizing discipline-specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11: **Economics and Project Management:** Understand the Economic Concept in the context of a specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.

PO 12: Lifelong Learning: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

List of BoS Members

Sl no	Category	Name & Designation	Address for Communication	e-Mail & Mobile No.
1	Chairperson	Radha MS Asst. Professor	Dept of Sociology SBRR Mahajana FGC, Mysuru	radhamfgc@gmail.com
2	Vice Chancellor Nominee	DrYashoda Chairperson	Dept of Sociology University of Mysore, Myruru	yashodamahesh678@gmail.com
3	Alumni	DrSowmya Kumar Associate Professor	DoS in Sociology Government First Grade College, KR Nagar	sociologychest@gmail.com
4	Other University	Prof. Rangappa Asst. Professor	HoD, Dept. of Sociology. Field Marshall Cariappa College, Kodagu.	

Objectives: Sociology

1. To provide knowledge aboutsocialentrepreneurship.
2. To help them to start their ownsocial enterpriseor non-profit startup as well as act innovative in the already working organization.
3. To providebasic knowledgeabout social organization among tribals.
4. General introduction to statistical techniques for analyzing social science data.
5. Learn techniques for summarizing data, examining relationships among variables, generalizing from samples to populations, and testing statistical hypotheses.
6. To introduce major sociological theoretical approaches.
7. Understand the concept of health, illness and social conditions.
8. Understand the role of medical doctors, paramedics, pharmaceutical industry and social institutions in maintaining and promoting health.
9. Enhance Sociological knowledge about the Local and Regional context of Karnataka.
10. Learn about the unique cultures in Karnataka.

Year-wise Programme Structure
Discipline Specific Courses (DSC)

Course, Type, Code & Title		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		EXAM		
		L	T/P	L:T:P	C1	C2	C3		
Sociology V Semester									
DSC (9) 231551	Social Entrepreneurship	4	0	4:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
DSC (10) 231552	Society and Tribes	4	0	4:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
DSC (11) 231553	Statistics for Sociological Research	4	0	4:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
Sociology VI Semester									
DSC (12) 231651	Sociological Perspectives	4	0	4:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
DSC (13) 231652	Sociology of Health	4	0	4:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
DSC (14) 231653	Society in Karnataka	4	0	4:0:0	20	20	60	$2\frac{1}{2}$Hrs	100
23INTSOC01	Internship	2	0	2:0:0	25	25	-	-	50

DSC (9) Syllabus for BA. Sociology (Basic Honors)

Course Code: 231551	**Course Title: Social Entrepreneurship**
Course Credits: 04 (4:0:0)	**Hours of Teaching/Week: 04**
Total Contact Hours: 60 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks:60**

Course Outcomes (COs)

CO1: Recognise the scope and need for social entrepreneurship.
CO2: Illustrate the plan and implement socially innovative ideas.
CO3: Equipped to start their own social enterprise or non-profit organization.
CO4: Critically analyse the role of social entrepreneurship in combating the social issues.

Course Content

DSC 9: Social Entrepreneurship	**60 Hrs**
Unit-1: Fundamentals of Social Entrepreneurship	**15 Hrs**
Chapter 1: Social Entrepreneurship: Meaning, Features and Relevance;Social Business:Meaning; Difference between Social Entrepreneurship and Social Business; Relation between Social Change and Social Entrepreneurship. **Chapter 2:** Typology of Ventures: Social PurposeVentures, Social Consequence Entrepreneurship, Enterprising Non-profits, Hybrid Models of Social Entrepreneurship. **Chapter 3:**Identifying social business opportunities.	
Unit-2:Establishment of Non-Profit Organisations	**15 Hrs**
Chapter-4: Concept (includes Government Organisations), Objectives and establishment of Non-Profit organizations (NPOs) **Chapter-5:**Legal Procedure for establishment of NPOs:Societies Registration Act, Indian Companies Act,	

Charitable Endowments Act, Foreign Contribution (Regulation) Act (FCRA);Available Tax Reliefs. **Chapter-6:**Social Values of NPOs: Mission and Vision; MoA and Bye-Laws.	
Unit-3: ManagementandFinancing	**15 Hrs**
Chapter 7: Human Resource Management: Staffing Plan, Social Security of Workers:Provisions and Benefits of Gratuity Act;Rules and Regulations of EPF Scheme. **Chapter-8:**Project Management:Definition of Concept;Identification of Project; Proposal Development: BasicFactors, Project Proposal Guide; Budget, Rationale for sending Project Proposal to the Donor; Proposal Writing; Do's and Don'ts of a Project Proposal **Chapter 9:**Financing:Sources of Finance:Government, Donors, International Agencies; Documents Used in Fund Raising; Due Diligence; Campaigns; Internal Income Generation.	
Unit-4:CaseStudies	**15 Hrs**
Chapter 10: Pratham,RUDSET,Vivekananda GirijanaKalyana Kendra,BRHills **Chapters 11 & 12:**Students should study the functioning of a local NPO, present their ideas in a seminar and submit a report (For example working in the areas of Sanitation, Rural Development,and (WomenEmpowerment)	

Books for Reference:

Ruef,Martin2007, SociologyofEntrepreneurship,EmeraldPublishingLimited
Sawang, Sukanlaya 2020 Entrepreneurship Education: A Lifelong Learning Approach, SpringerSharma, Sangeetha 2016 Entrepreneurship Development, Eastern Economy Edition, Prentice-HallIndia,Delhi

Sunder,Pushpa2013BusinessandCommunity:TheStoryofCorporateSocialResponsibilityinIndia,Sage

Swedberg, Richard (Ed) 2000, Entrepreneurship: The Social Science View, Oxford UniversityPress,London

Web links:

https://www.hec.edu/en/faculty-research/centers/society-organizations-institute/think/so-institute-executivefactsheets/what-social-business

https://socialtrendspot.medium.com/what-is-the-difference-between-social-innovation-social-enterprise-social-entrepreneurship-fe3fce7bf925

http://eprints.lse.ac.uk/29032/1/cswp3.pdfDefining the non-profit sectorhttps://prosper-strategies.com/seven-nonprofit-core-values-examples/

https://www.intechopen.com/chapters/55499

Course Articulation Matrix- 231551

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	2	2	1	1	2	2	2	2	2	2
CO2	1	1	2	1	2	2	2	2	2	1	2	2
CO3	1	2	2	1	2	2	2	2	2	2	2	2
C04	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	1.25	1.5	2	1.5	1.75	1.75	2	2	2	1.75	2.	2

DSC(10) Syllabus for BA. Sociology (Basic Honors)

Course Code: 231552	**Course Title: DSC (10) Society and Tribes**
Course Credits: 04 (4:0:0)	**Hours of Teaching/Week: 04**
Total Contact Hours: 60 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1: Recognise the social organization among the tribals.

CO2: Examine the impact of social changes on tribal social life.

CO3: Equipped to handle micro research work and communicateeffectively.

CO4: Recognise the reality of tribal settlements and their challenges.

Course Content:

DSC 10:Society and Tribes	**60 Hrs**
Unit – 1: Concepts and Categories	**15 Hrs**
Chapter-1: Tribes and Indigenous People; Scheduled Tribes, Primitive Tribes, De-Notified or ex-criminal Tribes in India; Geographical Distribution of Tribes in India **Chapter-2:**Meaning of:Hadis, Rules of Marriage,Clan,Lineage,Consanguinity and Affinity; Male-Female relations. **Chapter-3:**Social System,Legal System,Political System,Economic System,Religion and Magic.	
Unit – 2:Changes and Development Issues	**15 Hrs**
Chapter-4: Social Mobility:Types, Tribes and Caste, Tribe-Caste-Peasant Continuum, Sanskritisation. **Chapter-5:**Tribalisation, Detribalisation, Retribalisation. **Chapter-6:** Tribal Development and Welfare:	

Approaches - Assimilationist and Isolationist; Problems of Exploitation,Land Alienation, Unemployment, Cultural Transformation, Scheduled Areas, Tribal Justice and Modern Law.	
Unit – 3: Studying Tribes	**15 Hrs**
Chapter-7: Tradition of Fieldwork:History and Significance; Ethics of Fieldwork; Etic and Emic Perspectives **Chapter-8:**Sources of Data:Primary and Secondary **Chapter-9:**Participatory Method, CaseStudies, SampleSurveys, Genealogies	
Unit-4: FieldWork	**15 Hrs**
Students have to takeup field work in any nearby tribal settlement and present their findings in a Seminar and written report.	

Books for Reference:

Ahuja,R2001SocietyinIndia,RajatPublications,Jaipur

Bose, N K 1941, Hindu Mode of Tribal Absorption, Science and Culture,

Vol VIIElwin,Verier.1963.ANewDealforTribalIndia. Forde,GD1979,

Habitat,EconomyandSociety,MetuenandCoLondon

Furer-Haimerdorf, Christoph von Tribes of India: The Struggle for Survival,

University ofCaliforniaPress,Berkeley

Ghurye, G S 1963 The Scheduled Tribes, Popular Prakashan,

BombayHasnain, Nadeem 2011

Course Articulation Matrix – 231552

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	2	2	2	2	2	1	2
CO2	2	1	1	2	1	2	1	2	2	2	2	2
CO3	2	2	2	2	1	2	2	2	2	2	2	2
CO4	2	2	2	2	1	2	2	2	2	2	2	2
Weighted Average	2	1.5	1.5	1.75	1	2	1.75	2	2	2	1.75	2

DSC(11) Syllabus for BA. Sociology (Basic Honors)

Course Code: 231553	**Course Title: Statistics in Sociological Research**
Course Credits: 04(4:0:0)	**Hours of Teaching/Week: 04**
Total Contact Hours: 60 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1: Examine the researchmethods.
CO2:Evaluate the appropriate statistical techniques.
CO3: Identify and examine relationships among variables.
CO4: Enrich the knowledge of statistical research methods.

Course Content

DSC 11:Statistics in Sociological Research	**60 Hrs**
Unit – 1 Sociological Research	**15Hrs**
Chapter1: Meaning of Science, Social Science, Research, Research Design **Chapter 2:**Steps for Conducting Research: Choosing Research Topic, Literature Review, Sources of Data (Primary,Secondary) **Chapter3:**Meaning of Concept, Assumption, Hypothesis; Formulating a Hypothesis; Independent Variable, Dependent Variable; Drawing Conclusion.	
Unit – 2 MethodsofSociologicalResearch	**15Hrs**

Chapter4: Qualitative and Quantitative Methods: Meaning, Differences **Chapter 5:**Survey Methods: Sampling, Questionnaire, Interview **Chapter6:**Observation: Participant, Non-participant Observation.	
Unit – 3 Social Statistics	**15Hrs**
Chapter 7: What is Social Statistics? Need for Studying Social Statistics **Chapter 8:**Definition of -Population, Sample, Count, Fractions, Constant,Variable; Types of Statistics: Descriptive Statistics, Inferential Statistics **Chapter 9:**Meaning of Frequency Distribution; Construction of Frequency Tables; Diagrammatic and Graphical Representation of Grouped Data: Advantages; Types: PieCharts, Bar Charts, Histograms, FrequencyCurve.	
Unit-4: Methods of Statistical Measurement	**15 Hrs**
Chapter-10: Measures of Central Tendency: Merits, Demerits;Arithmetic Mean:Merits,Demerits;Median and Mode-Merits, Demerits **Chapter-11:-**Measures of Dispersion: Range,-Standard Deviation,Mean Deviation, Quartile Deviation **Chapter-12:-**Correlation:-Pearson's Correlation,-Rank Correlation.	

Books for Reference:

Agarwal,Y.P.(1995).StatisticalMethods:Concepts,ApplicationsandComputation,NewDelhi:SterlingPublishers.

Altman, Micah, Jeff Gill and Michael McDonald (2003). Numerical Issues in StatisticalComputingfortheSocialScientist,NewYork:JohnWileyandSons.

Course Articulation Matrix – 231553

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

DSC(12) Syllabus for BA. Sociology (Basic Honors)

Course Code: 231651	**Course Title: Sociological Perspectives**
Course Credits: 04 (4:0:0)	**Hours of Teaching/Week: 04**
Total Contact Hours: 60 Hrs	**Formative Assessment Marks: 40**
Exam Duration:$2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1: Analyse the significance of major Sociological theories
CO2: Critically examine the fundamental theoretical categories
CO3: Identify the different nuances of concepts and terms.
CO4: Recognise the need and importance of social interaction and reflective relations in society**.**

Course Content

DSC 12:Sociological Perspectives	**60 Hrs**
Unit-1: Basics of Theory	**15 Hrs**
Chapter-1: Theory:Meaning and Features, Meaning of Social Theory.Types of Theory:Macro,Meso,Micro **Chapter-2:**Building Blocks: Concept, Assumption, Hypothesis, Model;Need for Theoretical Thinking **Chapter-3:**Meaning of Induction, Deduction, Fact, Causal Relation, Correlation, Constant, Variable, Generalisation.	

Unit-2: Structural-FunctionalPerspective	15 Hrs
Chapter-4: Origin of Functionalism and Structuralism; Meaning of: SocialStructure,Social System, Function, Integration, Social Equilibrium, Social Order, Dysfunction **Chapter-5:**Postulates of Functional Analysis **Chapter-6:**Neo-functionalism	
Unit-3: ConflictPerspective	**15 Hrs**
Chapter-7: Origin of Conflict Perspective; Meaning of Conflict, Social Inequality, Power, Dominance, Authority, Class Struggle, Hegemony **Chapter-8:**Process of Social Conflictand Social Change; **Chapter-9:**Functions of Social Conflict.	
Unit-4:Symbolic Interaction Perspective	**15 Hrs**
Chapter-10: Origin of Symbolic Interaction Perspective; Meaning of:Symbol,Interaction, Social Construction of Reality, Interpretation, Reflexivity,Negotiation **Chapter-11:**Importance of Meaning; Definition of Situation **Chapter-12:**Dramaturgyand Everyday Life.	

Books for Reference:

Aron,Raymond(1991). MainCurrentsinSociologicalThought(Vol.1), London:Penguin.Barnes H.E. ed. (1948). An Introduction to the History of Sociology, Chicago: ChicagoUniversityPress.

Black, Max ed. (1961). The Social Theories of Talcott Parsons: A CriticalExamination,Carbondale: Southern Illinois UniversityPress.

Course Articulation Matrix – 231651

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	1	2	1	2	2	2	2	2
CO2	2	2	2	1	1	2	1	2	2	2	2	2
CO3	2	2	2	1	1	2	1	2	2	2	1	2
CO4	2	2	2	1	1	2	1	2	2	2	1	2
Weighted Average	2	2	2	1	1	2	1	2	2	2	1.5	2

DSC(13) Syllabus for BA. Sociology (Basic Honors)

CourseCode:231652	**Course Title: Sociology of Health**
CourseCredits:04(4:0:0)	**Hours of Teaching/Week: 04**
Total Contact Hours:60 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1: Analysethe concept of health, illness and social conditions
CO2: Analyse the relationship between social factors and health status
CO3:Examine the role of medical doctors, paramedics, pharmaceutical industry and social institutions in maintaining and promoting health.
CO4: Critically evaluate the role of hospitals, and pharma companies in providing health services.

Course Content

DSC-13:Sociology of Health	**60 Hrs**
Unit -1: Introduction	**15 Hrs**
Chapter-1: Sociology of Health:Meaning,Nature and Need;Scope:Sociology in Medicine and Sociology of Medicine **Chapter-2:**Emergence and Development of Sociology of Health in World and India **Chapter-3:**Actors:Doctors-Nurses and Paramedical	

Staff-Patients and their Relationship.	
Unit -2: Determinants of Health	**15 Hrs**
Chapter-4: Social Determinants:Class, Caste, Power, Gender, Social Cohesion **Chapter-5:**Cultural Determinants: Beliefs, Nutrition, Environment **Chapter-6:**Economic Determinants:Poverty, Homelessness, Living Conditions, Neighbourhood	
Unit-3: ModelsofHealth	**15 Hrs**
Chapter-7: Systems of Medicine (BiomedicineandAYUSH); Dominance of Bio-medical Model **Chapter-8:**Sick Role and Experiencing Illness **Chapter-9:**Hospital as Social Organisation.	
Unit-4: Health Care Reform	**15 Hrs**
Chapter-10: Medicalisation and Pharamceuticalisation of Health **Chapters 11 & 12:**Learning from the Field: Report on Health Services or Functioning of Health Organisations or Selected Health Programmes at State Level.	

Books for Reference:

Albert, Gary L. and R. Fitzpatrick (1994).Quality of Life in Health Care: Advances inMedicalSociology,Mumbai:JaiPress.

AnnandaleAllen(2001).TheSociologyofHealthandMedicine–ACriticalIntroduction,Cambridge:PolityPress.

Bloom,SamuelW.(1963).TheDoctorandHisPatient,NewYork:FreePress.Coe, RodneyM.(1970).SociologyofMedicine,NewYork: McGraw Hill

Course Articulation Matrix – 231652

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	2	2	2

Weighted Average	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

DSC(14) Syllabus for BA. Sociology (Basic Honors)

Course Code: 231653	**Course Title: Society in Karnataka**
Course Credits: 04(4:0:0)	**Hours of Teaching/Week: 04**
Total Contact Hours: 60 Hrs	**Formative Assessment Marks: 40**
Exam Duration: $2\frac{1}{2}$Hrs	**Semester-End Examination Marks: 60**

Course Outcomes(COs)

CO1: Acquaint and appreciate the cultural aspects of Karnataka.
CO2: Critique and examine the social changes occurring in Karnataka.
CO3: Identify the usefulness of sociological study in contemporary society.
CO4: Examine the changing social institutions and their impact on social life.

Course Content

DSC- 14 :SocietyinKarnataka	**60 Hrs**
Unit – 1: Features of Karnataka	**15 Hrs**
Chapter-1: Overview of Karnataka's History:Antiquity of Land and Language Social Composition: Religion, Language, Caste, Tribe, Class as per latest Census/ Sample Surveys; HDI and Regional Disparities. **Chapter -2:** Geography and Politics: Spatial Features: Plains, Coastal and Malnad; Old Mysuru, Hyderabad Karnataka, Bombay Karnataka and present-day administrative division (Mysuru,Bengaluru, Kalyana Karnataka and Kittur Karnataka); Political Landscape since Independence **Chapter-3:**Economic Profile:Developments in Agriculture, Industry and Service Sectors.	
Unit-2: Social Organisation	**15 Hrs**
Chapter-4: Religions, Languages, Castes, Tribes and Classes as per latest Census/Sample Survey **Chapter-5:**Education: Growth of STEM Courses,Status of Social Sciences. **Chapter-6:**HDI and Regional Disparities.	

Unit – 3 Social Movements of Karnataka	15 Hrs
Chapter-7: Unification of Karnataka, Save Kannada and Gokak Movements. **Chapter-8:**Environment Movements:Chipko and Appiko, Sahyadri Mining Protest, Sea-bird Naval Base, Movement Against Social Forestry. **Chapter-9:**Socio-Religious Movements:Veerashaiva, Non-Brahmin, Dalit Movements.	
Unit-4:Studies on Karnataka Society	**15 Hrs**
Chapter-10: Contributions of M N Srinivas, SParvathamma, HiremallurIshwaran **Chapters -11 and 12:** Fieldwork report on Changing Social Institutions and their Impact on Social Life.	

Books for Reference:

GovernmentofKarnataka.HumanDevelopmentReports,PlanningandStatistics Department,Bangalore.

Jai Prabhakar SC, Socio-Cultural DimensionsofDevelopmentinNorthKarnataka,CMDR MonographSeriesNo.–63.PanchamukhiPR.2001.North-South Divide:Karnataka'sDevelopmentScenario,CMDR.

Course Articulation Matrix – 231653

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	1	2	2	2	2	2	2	2
CO2	2	2	2	1	1	2	2	2	2	2	2	2
CO3	2	2	2	1	1	2	2	2	2	2	2	2
CO4	2	2	2	1	1	2	2	2	2	2	2	2
Weighted Average	2	2	2	1	1	2	2	2	2	2	2	2

VI SEMESTER BA INTERNSHIP

Course Code: 23INTSOC01	Course Title: Internship
Course Credits: 02	Hours of Teaching/Week:
Total Contact Hours: 90 Hours Internship	Formative Assessment Marks: 100 Marks(C1=25 + C2=25)

Note: This course will run as per the guidelines defined by the BoS Bachelor of Arts (Sociology), University of Mysore, Mysuru and the same is approved by BoS, Bachelor of Arts (Sociology) SBRR Mahajana First Grade College, Mysuru.

Course Outcomes (COs):

CO 1: Able to understand social phenomena.

CO2: Will engage in community development programs.

Course Articulation Matrix – 23INTSOC01

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	3	3	3	3	3	3	3	3	3	3	3	3
CO 2	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

Scheme of Valuation for Internship

C1 and C2 are internal assessments to be conducted during the 8th and 16th weeks respectively for the semester. The student will be evaluated on the basis of presentation skills and project development. The student has to compulsorily submit the project report for evaluation during C2. The report has to be certified by the Head of the Department and the Mentor/Supervisor.

The student is evaluated for 100 marks in C1 and C2 as per the following scheme:

- Project Progress Presentation (**C1**): 25 marks
- Project Development and Report (**C2**): 25marks

Assessment Criteria	Marks
Project Presentation Skills	25
Project Development Skills and Report	25
Total	**50**

Note: Assessment needs to be done as per the regulation.

Continuous Formative Evaluation/Internal Assessment

Total marks for each course shall be based on continuous assessments and semester-end examinations. The pattern is 40:60 for IA and Semester End Theory Examinations respectively.

	THEORY	
Total Marks		**100**
Continuous Assessment – 1 (C1)	**20**	
Continuous Assessment – 2 (C2)		**20**
Semester End Examination (C3)	**60**	

Evaluation Process of IA Marks shall be as follows:

a. The first component (C1) of the assessment is for 20% marks. This shall be based on tests, assignments, seminars, case studies, fieldwork, project work etc. This assessment and score process should be completed after completing 50% of the syllabus of the course and within 45 working days of the semester program.

b. The second component (C2) of the assessment is for 20% marks. This shall be based on the test, assignment, seminar, case study, fieldwork, internship/industrial practicum/project work, quiz etc. This assessment and score process should be based on the completion of the remaining 50% of the syllabus of the course of the semester.

c. During the 17th – 19th week of the semester, a semester-end examination shall be conducted by the college for each course. This forms the third and final component of the assessment (C3) and the maximum marks for the final component will be 60%.

d. In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on the scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator/Principal. The Program Coordinator/Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct the special test for a such candidate on the date fixed by the concerned teacher but before the commencement of the concerned semester-end examinations.

e. For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be sealed/signed

by the concerned department at the time of conducting tests/assignment/project work etc.

f. The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

	C1 Marks	C2 Marks	Total Marks
Session Test	**20**	**20**	
Seminar/Assignment/ Field Visits/Quiz etc.	**20**	**20**	
Total	**20**	**20**	**40**

- Conduct of Tests, Seminars, Case studies/Assignments etc., can be either in the C1 or in the C2 component as decided by the college and concerned department/teacher.
- The teachers concerned shall conduct tests/seminars/case studies etc., The students should be informed about the modalities well in advance. The evaluated course assignments during component I (C1) and component II (C2) of the assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teacher(s) and maintained by the Department. Before the commencement of the semester-end examination, the evaluated test, assignment etc., of C1 and C2 shall be obtained back to maintain them till the announcement of the results of the examination of the concerned semester.
- The marks of the internal assessment shall be published on the notice board of the department/college for information of the students.
- The internal assessment marks shall be communicated to the CoE at least 10 days before the commencement of the examinations and the CoE shall have access to the records of such periodical assessments.
- There shall be no minimum in respect of internal assessment marks.
- Internal assessment marks may be recorded separately. A candidate who has failed or rejected the result shall retain the internal assessment marks.

Question Paper Pattern (DSC and OE)
B.A. Examination Month /Year
(Scheme NEP) Sociology
Title of the Paper

Time: 2 Hrs 30 mins **Max Marks: 60**

Part-A

I. Answer all Questions: **5 X 2 = 10**

1.
2.
3.
4.
5.

Part-B

II. Answer any Four Questions: **4 X 5 = 20**

6.
7.
8.
9.
10.
11.

Part-C

III. Answer any Three Questions: **3X 10 = 30**

12.
13.
14.
15.
16

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Jayalakshmipuram, Mysuru – 570 012
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College with Potential for Excellence

Department of Sociology

B.A. Sociology BoS Meeting for V & VI Sem held on 31.08.2023

Sl. No.	Name	Designation	Signature
1	**Radha M.S.** HoD of Sociology SBRR Mahajana First Grade College (Autonomous) J.L. Puram, Mysuru radhamfgc@gmail.com 9880473042	Chairperson	
2	**Prof. Yashoda** Chairperson DoS in Sociology and Research University of Mysore Mysuru 9844761922	VC Nominee	31/8/2023
3	**Dr. Soumya Kumar** Associate Professor Dept. of Sociology Govt. First Grade College K.R. Nagar 9480559845	Alumni	31/8/23
4	**Prof. Rangappa** HoD of Sociology Field Marshall Cariappa College Kodagu 9448202556	Other University	Not Present

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DEPARTMENT OF NCC

UG ☑

PG ☐

Revised NEP Syllabi for I/II/III/IV Semester SEC - NCC 2022-23

DEPARTMENT OF NCC

Motto

Unity and Discipline

Vision

To take up Career in the Armed Forces

Mission

To Provide leadership in all Walks of Life and always be available for the service of the nation

NCC -Programme Outcomes

PO 1	**Domain Knowledge**
PO 2	**Problem Analysis**
PO 3	**Design & Development of Solutions**
PO 4	**Research and Investigation**
PO 5	**Modern Techniques & Tools**
PO 6	**Impact on Society**
PO 7	**Environment & Sustainability**
PO 8	**Moral & Ethical Values**
PO 9	**Individual & Teamwork**
PO 10	**Communication**
PO 11	**Project Management & Finance**
PO 12	**Life Long Learning**

Course Structure (NEP)

Skill Enhancement Course (SEC) - NCC

I/II Year

Course Type, Code and Title		Hours/ Week		L:T:P (Credits)	Maximum Marks			Exam Duration (Practical)	Total Marks
					IA		Exam		
		L	T/P		C1	C2	C3		
NCC – I/II/III/IV Semester									
SEC	NCC 22NCC94	0	4	0:0:2 (2 Credit)	10	10	30	1 Hour	50

Semester-I/II/III/IV

Skill Enhancement Courses (SEC)

Course Code: 22NCC94	**Course Title:** NCC
Course Credits (L:T:P): 02 (0:0:2)	**Teaching Hours/Week:** 04 Hours
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 25
Exam Duration: 1 Hour (Practical)	**Semester End Examination Marks:** 25

Course Objective:

To develop Character, Comradeship, Discipline, Leadership, Secular Outlook, Spirit of Adventure and the Ideals of selfless Service among the youth of the Country.

Course Outcomes:

CO1: Acquire the concept of NCC
CO2: Improvised Outlook and Turnout
CO3: Work for the Social Well Being

Unit 1: Introduction to NCC, Aims and Objectives, Organisation structure, Ranks, NCC song, Incentives, Code of ethics and Conduct.

Unit 2: Drill-improve bearing and smartness, Turnout, Obedience to Orders, Types of Drill.

Unit 3: National integration, Health and Hygiene, Personality development and leadership, Social awareness and Community development, Environment awareness and Conservation.

Course Articulation Matrix – 22NCC94

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	1	2	2	2	2	2	-	2
CO2	2	1	1	-	-	1	1	2	3	2	1	2
CO3	2	1	1	1	1	2	2	2	3	2	1	2
Wtd. Avg.	**2**	**1**	**1**	**1**	**1**	**1.6**	**1.6**	**2**	**2.6**	**2**	**1**	**2**

Evaluation Pattern:

Assessment Criteria	**Marks**
C 1 - Assignment	10
C 2 - Viva	10
C 3 – Semester End Examination (Practical)	30
Total	**50**

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College with Potential for Excellence

NATIONAL SERVICE SCHEME

UG ☑

PG ☐

Revised NEP Syllabi for I/II/III/IV Semester SEC - NSS

2022-23

NATIONAL SERVICE SCHEME

MOTTO

Not me But You

VISION

To build the youth with the mind and spirit to serve the society
And work for the social uplift of the down-trodden masses of our Nation as a movement

MISSION

To promote social, economic, technological, and political change in order
To expand civilization beyond Earth, to settle space and to use the resulting resources to build a hopeful and prosperous future for humanity.

Program Outcomes (POs) for National Service Scheme

POs	Details of the Program Outcomes (POs)
PO1	Domain Knowledge
PO2	Problem Analysis
PO3	Design & Development of Solutions
PO4	Research & Investigation
PO5	Usage of Modern Tools and Techniques
PO6	Social Sciences & Society
PO7	Environment and Sustainability
PO8	Moral and Ethical Values
PO9	Individual and Teamwork.
PO10	Communication
PO11	Economics and Project Management
PO12	Lifelong Learning

Course Structure

I/II Year

Course Type, Code and Title		Hours/ Week		L:T:P (Credits)	Maximum Marks			Total Marks
					IA		Exam	
		L	T/P		C1	C2	C3	
NSS – I/II/III/IV Semester								
SEC	22NSS94	0	4	0:0:2 (2 Credit)	10	10	30	50

Semester-I/II/III/IV Semester
Skill Enhancement Course

National Service Scheme

Course Code: 22NSS94	**Course Title:** National Service Scheme (NSS)
Course Credits (L:T:P): 02 (0:0:2)	**Teaching Hours/Week:** 04 Hours
Total Contact Hours: 56 Hours	**Formative Assessment:** 20 Marks
Exam Duration: 1 Hour (Practical)	**Semester End Examination:** 30 Marks

Course Outcomes:

CO1: Acquire the fundamentals concept of NSS

CO2: Understand the Volunteerism & Organization structure of NSS

CO3: Appreciate the culture of Campus Activities, Shramadhan and Awareness Program and its Benefits through working as a team or group.

CO4: Develop overall personality of volunteers, Off Campus Activities and make them as leaders and responsible Citizens of our nation.

Course Contents	**Hours: 56**
Unit – I : Fundamentals of NSS	
Introduction to NSS, Origin of NSS, Aims and Objectives of NSS, NSS Motto, NSS Emblem, NSS Badge, NSS Day, NSS Songs.	14
Unit - II : Volunteerism & Organization structure of NSS	
Volunteerism and NSS: Volunteerism– Meaning, definition, basic qualities of volunteers, need of volunteerism for National development. **Organization structure of NSS**- National level, State level, University and Institutional Level.	14
Unit - III : Campus Activities	
Shramadhan – Plantation, Cleaning, Watering, Weeding, Any other activities. **Awareness Programmes –** Seminar, Workshops, Celebration of National and International days, Personality Development Programmes, Group Activities, etc.,	14
Unit - IV : Off Campus Activities	
Rally, Jatha, Visit to Adopted villages, Swatchatha Programme, Visit and Conserving Ancient monuments and heritage site, Socio Economic Survey of village/slum, Nature Camp, Environmental Education, JOB Card (APL, BPL, Social security schemes), Women Empowerment Programme, Health Camps, Blood grouping awareness and Blood donation, Legal awareness Programme, Literacy Programme, Water Conservation Programme, One Day Special Camp in avillage (preferably in adopted village).	14

References:

a) Prof. B.K. Shivanna, "National Service Scheme" Printing Press KSOU, Mysore 2011
b) MadhuAhuja, Students Leaders in the National Service Scheme (NSSS) in Delhi : A case study 1986 (New Delhi : Dept. of Management and Extension, Lady Irwin College, University of Delhi, 1986)
c) Chattarjee, B., Social service opportunities for students in Slum Areas (reprint : Delhi : Delhi School of Social Work, University of Delhi 1973)
d) Desai Bharat. H, A Social Psychological Study of the effectiveness of the National Service Scheme in developing some aspects of the Student Personality – (Ph. D Thesis submitted to university of Pune 1982)
e) Dikxit. P Sanjeeva, National Service Scheme in Andhra Pradesh, (Andhra University Press Publications, 1994)
f) Dilshad. M.B National Service Scheme in Karnataka, (Ph. D Thesis submitted to Karnataka University Dharwad, 1997)
g) Balan K., (1985), Youth Power in the Modern World, Ajanta Publications, NewDelhi
h) Jones Gill, (2009), Youth, Polity Press,UK
i) Kehily Jane Mary (Etd.) (2007), Understanding Youth: Perspectives, Identities and Practices, Sage Publication, London
j) Landis H. Paul, (2011), Adolescence and Youth: The Process of Maturing, Sarup Book Publishers Pvt. Ltd., New Delhi

Course Articulation Matrix- 22NSS94

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	-	1	3	3	2	3	2	1	3
CO2	1	2	1	1	-	3	3	3	3	2	1	2
CO3	2	2	2	1	-	3	3	3	3	2	1	3
CO4	2	3	1	1	1	3	3	3	3	3	2	3
Weighted Average	**1.75**	**2.25**	**1.5**	**1**	**1**	**3**	**3**	**2.75**	**3**	**2.25**	**1.25**	**2.75**

Scheme of Valuation

Assessment Criteria	Marks
C1 – Unit 1 & 2 Assignment / Test / Quiz	**10**
C2 – Campus / off campus Activities Assignment / Test / Quiz	**10**
C3 - Participation – 10 marks Leadership & Responsibility – 10 marks Report Submission – 10 marks	**30**
Total	**50**

Ability Enhancement Compulsory Course (AECC – Physical Education and Sports Science)

(60 lectures)

PHYSICAL EDUCATION AND SPORTS SCIENCE
SYLLABUS FOR UNDER GRADUATE

Lecture	Tutorial	Practical	
			Number of Hours: 60
2	1	0	Internal Assessment (C1 & C2): 20
			Final Examination Marks (C3): 80

OBJECTIVES

On completion of the course the students shall understand following concepts

- Physical Education and Sports
- Game, Sports and Physical Fitness
- Food, components of food and importance of balance diet
- Health, Wellness and Nutrition
- Posture and First Aid
- Importance of yoga, Physiological benefits of asanas, Pranayama, Meditation

Outcome:

After completing the course the students not only can take care of his\her own physical fitness and health but also serve the society with the concept of fit nation.

UNIT-1 PHYSICAL EDUCATION AND SPORTS:

a) Physical Education: Meaning, Definition, Aim and Objectives
b) Sport, Game, Play and Recreation: Meaning and Importance
c) Modern Olympics: Origin and development and Major Sports Awards in India

(Lecture – 12 hrs.)

UNIT-2 GAME, SPORTS AND PHYSICAL FITNESS:

a) Introduction of major sports and games
b) Essential qualities required for sports persons and sports performance
c) Physical fitness: Meaning and Components of Physical Fitness
d) Types of Physical Fitness: Health related fitness and performance related fitness

(Lecture – 12 hrs.)

UNIT-3 HEALTH, WELLNESS AND NUTRITION:

a) Health: Meaning, Dimensions of Health and Personal Hygiene
b) Health Education: Need, Objectives and Importance
c) Wellness: Meaning, Importance and Components of Wellness
d) Balance Diet and Importance of Balance Diet in Sports

(Lecture – 12 hrs.)

UNIT-4 POSTURE AND FIRST AID:

a) Posture: Concept and advantages of correct posture, Causes for bad posture
b) Common Postural Deformities: Kyphosis, Lordosis, Scoliosis, Flat foot, Knocked Knee and Bow Leg

c) Remedial Exercises for Postural Deformities
d) First Aid: Importance, Procedure and PRICE treatment

(Lecture – 12 hrs.)

UNIT-5 YOGA:

a) Meaning, Importance and Elements of Yoga
b) Physiological benefits of Asanas, Pranayama and Meditation
c) Types of Asanas, Pranayama and Meditation
d) Guidelines and Procedure for yoga practice

(Lecture – 12 hrs.)

Board of Studies

Sl.No.	Name and address	Designation	Signature
1	Dr.H.N.Bhaskar HoD, Dept of Physical Education and Sports SBRR Mahajana First Grade College Mysore **Contact No:** 9845190967 bhaskarhn.fgc@mahajana.edu.in	Chairman	
2	Sri.Madhusudan.PS Physical Education Director Dept of Physical Education and Sports, SBRR Mahajana First Grade College, Mysore **Contact No:** 7019659926	Member	
3	Dr.Madialagan Associate Professor DOS in PESS, Univeristy of Mysore, Mysore. Contact No:9740231972	Member	
4	Dr.Amarnath Professor, University College of Physical Education, Bangalore University, Bangalore-560056 **Contact No:** 9449751141 kkamarnathucpe@gmail.com	Member	
5	Dr.S.M.Prakash, Director of Physical Education, Kuvempu University, Shivamogga, **Contact No: 9448260774** **Yesempee@gmail.com**	Member	
6	Sri.MP.Muralidhar, Physical Education Director, ATME College of Engineering, VTU, Mysore. **Contact No:9611551921** **mpmuralidhar7@gmail.com**	Member	

Mahajana Education Society (R)
Education to Excel
SBRR Mahajana First Grade College (Autonomous)
Jayalakshmipuram, Mysuru – 570 012 Karnataka, INDIA
Affiliated to University of Mysore
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

Proceedings of the BoS Meeting held on 28.12.2020 at 2.30 p.m. in the Office of the Director of Physical Education

Members Present:

1.	Dr. H N Bhaskar	Chairman
2.	Dr. S Madialagan	University Nominee
3.	Sri P S Madhusudan	Member
4.	Sri Muralidhar M P	Member
5.	Dr. S M Prakash	External Member
6.	Dr. K K Amarnath	External Member

- At the outset, Dr. H N Bhaskar, Chairman, BoS welcomed the members.
- Dr. S Madialagan, University Nominee requested the Board for the smooth conduct of the meeting.
- The set agenda was taken up for discussion and following are the decisions made:

Agenda 1:

Framing of syllabus for Under Graduate courses (CBCS) under Ability Enhancement Compulsory Course (AECC) in Physical Education and Sports Science.

Decision:

The Board resolved to retain the syllabi of University of Mysore. However, few modifications were made and the modified details are enclosed in Annexure – I.

Agenda 2:

Question Paper Pattern

Decision:

The Board approved the Model Question Paper and the paper is enclosed in Annexure – II.

Agenda 3: Panel of Examiners

Decision:

The Board approved the Panel of Examiners and the board authorized the Chairman, BoS to submit the list of Panel of Examiners to the Controller of Examinations and the details are enclosed in Annexure – III.

Agenda 4: Internal Assessment

Decision:

The Board approved to conduct one test and one assignment per semester for 10 marks each as part of the Internal Assessment. Other procedures will be followed as per the university UG guidelines.

The Chairman proposed vote of thanks and concluded the meeting.

Signature:

1. (Dr.H.N.Bhaskar)
2. (Sri. PS. Madhusudhana)
3. (Dr.S.Madialagan)
4. (Dr. Amarnath.KK)
5. (Dr.S.M.Prakash)
6. (Sri.M.P.Muralidhar)

Chairperson
BOS/BOE in Physical Education
SBRR Mahajana First Grade College
(Autonomous)
Jayalakshmipuram, Mysuru

Mahajana Education Society ®

Education to Excel

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DEPARTMENT OF RANGERS AND ROVERS

UG ☑

PG ☐

Revised NEP Syllabi for I/II/III/IV Semester Rangers and Rovers (SEC)

2022-2023

DEPARTMENT OF RANGERS AND ROVERS

Motto

Service

Vision

To bring over all development in one's personality

Mission

To provide a value system based leadership building a better world and to play a constructive role in society.

Program Outcome (PO) Attributes

PO 1	**Domain Knowledge**
PO 2	**Problem Analysis**
PO 3	**Design & Development of Solutions**
PO 4	**Research and Investigation**
PO 5	**Modern Techniques & Tools**
PO 6	**Impact on Society**
PO 7	**Environment & Sustainability**
PO 8	**Moral & Ethical Values**
PO 9	**Individual & Teamwork**
PO 10	**Communication**
PO 11	**Project Management & Finance**
PO 12	**Life Long Learning**

Course Structure (NEP)

Skill Enhancement Course (SEC)

Course Type, Code and Title		Hours/ Week		L:T:P (Credits)	Maximum Marks			Exam Duration (Practical)	Total Marks
					IA		Exam		
		L	T/P		C1	C2	C3		
Rangers and Rovers – I/II/III/IV Semester									
SEC	RR BA/BCA/BSc/BCom/BBA 22RNR94	-	4	0:0:2	10	10	30	1 Hour	50

Skill Enhancement Courses (SEC): for semester I/II/III/IV

SEC Module

Course Code: 22RNR94	**Course Title:** Rangers and Rovers
Course Credits: 02 (0:0:2)	**Hours of Teaching/Week:** 4 Hour (Practical)
Total Contact Hours: 56 Hours	**Formative Assessment Marks:** 20
Exam Duration: 1 Hour (Practical)	**Semester End Examination Marks:** 30

Course Objective:

1. To practice national integration.
2. To develop personality through community services.
3. To work with and among people.
4. To gain leadership skills.
5. To enable students to have ethical sense.

Course Outcomes:

CO1: Assimilate the knowledge and inculcate the Leadership, good manners and ideals of disciplined responsible young citizens.

Content of the course		Hours
Unit- I	**Introduction and Knowledge** - Rovering and Rangering, Prayer & Flag Song, Flags, Promise and Law, Discipline and Uniform, First Aid, Knots, Make a scarf using the material available at your home.	16
Unit- II	**Skills :** Team building and leadership skills- Campfire/ Local Handicraft/ College level cleanliness drive/ rope work/ cooking/ first aid/ signaling/ skill oriented Games- In-door and Outdoor Games ,etc	20
Unit- III	**Group activities**: Community service-sustainable development/Bore well recharge / Food save warriors / Organize science exhibition / Road Safety awareness/Rain Water Harvesting/Local Festivals service/Prepare Seed Balls/Teaching Game etc.	20

Reference Books

1. Scouting for Boys
2. Rovering to Success
3. Girl Guiding in India
4. Ranger Handbook
5. Ranger Leader Handbook
6. Rover Scouting
7. All faith prayer
8. Pioneering Hand Book
9. B.P. Six Exercise
10. Camp Fire Book
11. Camping and Hiking
12. Drill and Marchpast
13. Knots and Pioneering
14. APRO – II
15. APRO – III
16. http://sdgs.scout.org

Reference books and materials available at http://shop.bsgkarnatka.org

Address: The Bharat Scouts and Guides, KarnatakaState Headquarters
#39, Shanthi Gruha, Palace RoadBangalore - 560001

Course Articulation Matrix – 22RNR94

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	2	3	3	2	2	1	2
Wtd. Avg.	**2**	**1**	**1**	**1**	**1**	**2**	**3**	**3**	**2**	**2**	**1**	**2**

ASSESSMENT:

Assessment Criteria	Marks
C1: Assignment	10
C2: Activities	10
C3: Semester End Examination (Practical)	30
TOTAL	**50**

EVALUATION PATTERN

C1	10 Marks (Assignment)
C2	10 Marks (Team building and leadership skills- Campfire/ Local Handicraft/ College level cleanliness drive/ rope work/ cooking/ first aid/ signaling/ skill oriented Games- In-door and Outdoor Games/ Community service- sustainable development/Bore well recharge / Food save warriors / Organize science exhibition /Road Safety awareness/Rain Water Harvesting/Local Festivals service/Prepare Seed Balls/Teaching Game etc.)
C3	30 Marks (Semester End Examination (Practical)
Total	50 Marks

SBRR MAHAJANA FIRST GRADE COLLEGE (Autonomous)
POST GRADUATE WING
(Accredited by NAAC with 'A' grade)

Pooja Bhagavat Memorial Mahajana Education Centre.

Affiliated to University of Mysore.
K.R.S. Road Metagalli, Mysuru-570016
Ph:0821-4009600, 4009614, 4009622
Website: pgc.mahajana.edu.in

MBA (Autonomous) Regulations w.e.f. 2022 – 2023

DEPARTMENT OF STUDIES IN BUSINESS ADMINISTRATION

PROGRAMME CURRICULUM & REGULATIONS GOVERNING

MASTER OF BUSINESS ADMINISTRATION (MBA) DEGREE COURSEPROGRAMME

W.E.F 2021

AS PER UGC GUIDELINES ON ADOPTION OF CHOICE BASED CREDITSYSTEM

1. Programme Title

The Programme shall be called 'Master of Business Administration Degree Programme'. The duration of the Programme is two years consisting of four semesters; two semesters in each year. A candidate joining the Programme shall pursue prescribed Programme of studies.

2. Eligibility for Admission

Any graduate or postgraduate in arts, science, commerce, business management, allied sciences, engineering and technology, medical sciences of this University or from any other university considered equivalent thereto shall be eligible for admission to the Programme. Further the applicant shall have a minimum of 50% in the qualifying examination. A relaxation of 5% is available for SC/ST & Cat-I candidates. Selection of candidates to the Programme shall be done as per rules of the University and Government of Karnataka.

3. Programme Content and Instruction

Programme content: The Programme comprises of course of study, internship, project work and field work as prescribed.

Pedagogy includes lectures, case studies, group discussions, quizzes, seminars, computer practical, summer internship, factory visits etc.

a) Courses in the programme are of three types: Core (C), Foundation (F) and Electives (E):

Core (C): Core Course is the course, which is to be compulsorily studied by a student as a core requirement to complete the programme. Business Familiarization Report (BFR) and Project Report are part of the core courses.

Foundation (F): Foundation (F) courses are the courses based upon the contents that lead to knowledge enhancement that are mandatory for all disciplines.

Elective (E): Elective Course is a course, which can be chosen from a group of papers**.**

b) **Internship and Business Familiarization Report (BFR):** In the beginning of the

third semester, the students shall undertake team based internship in a business firm and prepare a Business Familiarization Report under the guidance of a faculty member. The report shall be submitted before the commencement of the third semester examinations.

i) Internship in a year cannot be for a continuous period of more than 4 weeks in a given academic year.

ii) Internship undergone during academic classes shall not be considered

iii) Each students shall maintain internship dairy

iv) Certificates (Color Photocopy) of each internship shall be submitted to the department along with there port

Details to mention on the Certificate:

i) Students name and registration number

ii) Name of the institution/organization and duration of internship with date

iii) Date, seal and signature of the authority.

c) **Project:** Each candidate shall carry out the project work independently as per Scheme of Teaching and Examinations under the guidance of one of the faculty members of the Department in the Institution of study.

The topic and title of the dissertation shall be chosen by the candidate in consultation with the guide. The subject and topic of the dissertation shall be from the major field of studies of the candidate. Modification of only the title but not the field of work may be permitted at the time of final submission of dissertation report during IV semester. If dissertation has to be carried out in any industry/R&D labs/business organizations, outside the campus, permission shall be taken from the HoD to that effect.

4. Attendance andConduct

The Programme is a full time Programme and students **SHALL NOT** take up any employment/course, part time or full time during their study. Students found violating this rule shall be removed from the Programme. Minimum attendance of 75% of actual working hours is required in each course. A student who does not satisfy the requirements of attendance and conduct shall not be permitted to appear for the examination in the concerned course.

5. (a)Evaluation

Evaluation of each course is divided into continuous assessment (CA) and end term examination with marks allocated as shown in the table. Continuous assessment will be carried out in two stages: One after the eight weeks of instructions designated as C1, the

second, after sixteen weeks of instruction designated as C2. The end of term examination designated as C3 will be held between eighteenth and twentieth week of the semester. Marks will be awarded on the basis of continuous assessment that include announced and surprise tests, term papers / seminars / quizzes / case discussions, viva and practical's.

The breakup of marks will be as follows:

a. C1 (Covering the first two units) – 15Marks

b. C2 (Covering the next twou nits) – 15Marks

c. C3 (Covering all the units) – 70 Marks

Total **100Marks**

Term end examination (C3) will be of 3 Hours duration for each subject.

Setting questions papers and evaluation of answer scripts.

I. Questions papers in three sets shall be set by the internal examiner for a course. Whenever there are no sufficient internal examiners, the Chairman of BoE shall get the questions papers set by external examiners.

II. The Board of Examiners shall scrutinize and approve the question papers and scheme of valuation.

III. Questions not to be set from practical components area in the C3 examination of the concerned course.

IV. There shall be valuation for all theory papers by examiner. In case a candidate secures less than 30% in C1 and C2 put together in a course, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course. In case a candidate's class attendance in a course is less than 75% or as stipulated by the University, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course.

Example

C1+C2= (15+15=30 Marks), 30% of 30Marks =9 Marks (*) (Qualifying Marks)

*Less than 9 Marks in C1+C2 is Drop, More than 9 Marks in C1+C2 is Pass

Teachers offering the courses will place the above details in the Department Council meeting during the last week of the semester, before the commencement of C3, and subsequently a notification pertaining to the above will be brought out by the Chairman of the Department before the commencement of C3 examination. A copy of this notification shall also be sent to the office of the Registrar and Deputy Registrar (Evaluation).

In case a candidate secures less than 30% in C3, he/she may choose DROP/MAKEUP option. In case a candidate secures more than or equal to 30% in C3, but his/her grade (G) = 4, then he/she may be declared to have been conditionally successful in this course, provided that such a benefit of conditional clearance based on G=4 shall not be availed for more than 8 credits for the entire programme of Master's Degree of two years. In case a candidate secures less than 30% in C3, he/she may choose DROP/MAKE-UP option.

Example

C3= 70 Marks, Eligible is 30% of 70 Marks is 21 (*)

*Less than 21 is Drop and more than 21 is Pass

The candidate has to exercise his/her option to DROP immediately within 10 days from the date of notification of results.

A MAKE UP examination for odd semester courses will be conducted along with next regular odd semester examinations and for even semester courses along with a next regular even semester examinations. If a candidate is still unsuccessful, he/she may opt for DROP or again take up MAKE UP examination; however, not exceeding double the duration norm in one stretch from the date of joining the course.

A candidate has to re-register for the DROPPED course when the course is offered again by the department. A candidate who is said to have DROPPED project work has to re-register for the same subsequently within the stipulated period. The details of any dropped course will not appear in the grade card.

The tentative / provisional grade card will be issued by the Controller (Evaluation) at the end of every semester indicating the courses completed successfully. This statement will not contain the list of DROPPED courses.

Upon successful completion of Master's degree a final grade card consisting of grades of all courses successfully completed by the candidate will be issued by the Controller (Evaluation).

5.(b) Evaluation of courses with credit 1.

Evaluation of courses with credit 1 (Computer Applications in Management, Skill Development Programme-1, Skill Development Programme-2, Skill Development Programme-3) will be evaluated for 50 marks through internal valuation.

6. Evaluation of Business Familiarization Report (BFR) and Final Project Report

BFR will be evaluated by the concerned guide, for 50 marks through internal valuation.

Each Final project report will be evaluated for 70 marks by internal and external

examiners. The guide ordinarily shall be the internal examiner. A viva-voce on the project report for 30 marks will be conducted by a board of three members constituted by the Chairman, BOE from the approved list of examiners.

7. Calculation of Cumulative Grade point Average(CGPA)

The grade and the grade point earned by the candidate in the course will be as given below

Marks	Grade	Grade Point (GP = V x G)
30 – 39	4	V*4
40 – 49	5	V*5
50 – 59	6	V*6
60 – 64	6.5	V*6.5
65 – 69	7	V*7
70 – 74	7.5	V*7.5
75 – 79	8	V*8
80 – 84	8.5	V*8.5
85 – 89	9	V*9
90 – 94	9.5	V*9.5
95 – 100	10	V*10

Here, P is the percentage of marks, P = [(C1+C2) + C3] secured by a candidate in a course which is rounded to nearest integer. V is the credit value of course. G is the grade and GP is the grade

point.

A candidate can withdraw any course within in ten days from the date of notification of final results. Whenever a candidate withdraws a course, he/she has to register for the same course in case it is hard core course, the same course or an alternate course if it is soft core/open elective. A DROPPED course is automatically considered as a course withdrawn.

Overall cumulative grade point average (CGPA) of a candidate after successful completion the required number of credits (89) is given by

$$CGPA = \Sigma GP / \text{Total number of credits}$$

Only such students, who successfully earn 89 credits in 4 semesters, without break, shall be considered for declaration of ranks and or medals.

8. Declaration of results

The final grade point (FGP) to be awarded to the student is based on CGPA secured by the candidate and is given as follows.

CGPA	FGP	
	Numerical Index	Qualitative Index
4 < = CGPA < 5	5	SECOND CLASS
5 < = CGPA < 6	6	
6 < = CGPA < 7	7	FIRST CLASS
7 < = CGPA < 8	8	
8 < = CGPA < 9	9	DISTINCTION
9 < = CGPA < =10	10	

Overall percentage = 10*CGPA or is said to be 50% in case CGPA<5

EXAMPLE

Sl.No	Title of the Course	Grade (G)	Credit Value (V)	Grade Point (GP)	GP = V x G
1.	XXX	30 – 39	3	4	12
2.	XXX	40 – 49	4	5	20
3.	XXX	50 – 59	4	6	24
4.	XXX	60 – 64	4	6.5	24.5
5.	XXX	65 – 69	4	7	28
6.	XXX	70 – 74	3	7.5	21.5
7.	XXX	75 – 79	3	8	24
			25		154

Total no of credits =25

CGPA = Σ GP / Total number of credits

CGPA = 154 / 25 = 6.16 = FIRST CLASS

(Note: As per the Section 7 & 8)

9. Medium of Instruction

The medium of instruction shall be English. However, a candidate will be permitted to write the examination in English. This rule is not applicable to languages.

10. In case of any discrepancy, the general provisions of CBCS and Continuous Assessment and Grading Pattern (CAGP) of the University of Mysore will be applicable.

DEPARTMENT OF STUDIES IN BUSINESS ADMINISTRATION CHOICE BASED CREDIT SYSTEM- 2021 – 2022

MBA Programme Structure and Syllabi Minimum Credits required for MBA Degree

I to IV Semesters	Core Course (C)		Foundation course (F)		Elective Course (E)		Total	
	Numbers	Credits	Numbers	Credits	Number	Credits	Numbers	Credits
	16	62	04	06	07	21	27	89

Minimum Credits to be registered by a student in a normal phase to successfully complete MBA degree in four semesters

Semesters	Core Course (C)		Foundation course (F)		Elective Course (E)		Total	
	Numbers	Credits	Numbers	Credits	Number	Credits	Numbers	Credits
I	06	23	01	01	00	00	07	24
II	05	20	02	04	00	00	07	24
III	03	10	01	01	03	09	07	20
IV	02	09	00	00	04	12	06	21
Total	16	62	04	06	07	21	27	89

Semester – I

Sl No	Title of the Course	Core/ Foundation	L.T.P	CREDIT	Teaching hour per week
01	Management Theory and Practices	Core	3:0:1	4	5
02	Organizational Behavior	Core	3:0:1	4	5
03	Corporate Economics	Core	3:0:1	4	5
04	Accounting for Managers	Core	3:1:0	4	5
05	Business Communication	Core	2:0:1	3	4
06	Statistics for Management	Core	3:0:1	4	5
07	Computer Applications in Management	F	0:0:1	1	2
08	Skill Development Pogram-1*	F	0:0:1	1	2

* A Student shall choose any one Foundation Course

Semester - II

SL. No	Title of the Course	Core / Foundation	L:T:P	CREDIT	Teaching hour per week
01	Marketing Management	Core	3:0:1	4	5
02	Human Resource Management	Core	3:0:1	4	5
03	Corporate Finance	Core	3:0:1	4	5
04	Business Research Methods	Core	3:0:1	4	5
05	Operations Management	Core	3:0:1	4	5
06	Legal aspects of Business	F	2:1:0	3	4
07	Operations Research	F	2:0:1	3	4
08	Management Information Systems	F	2:0:1	3	4
09	Skill Development Program-2	F	0:0:1	1	2

* Any one foundation course from the available foundation courses (Legal aspects of Business, Management Information Systems, and Operations Research) shall be selected by the student along with the foundation course Skill Development Program-2, at the commencement of second semester. The department council/ affiliated college will announce at the beginning of the second semester, any two or more foundation courses which will be offered during second semester depending upon the availability of faculty and the demand for foundation courses. The minimum number of students opting for a foundation course should be 20.

Semester - III

Sl.No	Title of the Course	Core/ Foundation/ Elective	L:T:P	Credit	Teaching hour per week
01	Strategic Management	Core	3:0:1	4	5
02	Entrepreneurship	Core	2:0:2	4	4
03	Elective 1	E	2:0:1	3	4
04	Elective 2	E	2:0:1	3	4
05	Elective 3	E	2:0:1	3	4

06	Business Familiarization Report	Core	0:0:2	2	
07	Skill Development - 3	F	0:0:1	1	

Electives: Group - I

Sl.No	Title of the Course	Elective	L:T:P	Credit	Teaching hour per week
01	Consumer Behavior	Elective – I	2:0:1	3	4
02	Sales and Logistics Management	Elective – II	2:0:1	3	4
03	Advertising and Sales Promotion Management	Elective – III	2:0:1	3	4

Electives: Group - II

Sl.No	Title of the Course	Elective	L:T:P	Credit	Teaching hour per week
01	Strategic Financial Management	Elective – I	2:0:1	3	4
02	Financial Markets and Service	Elective – II	2:0:1	3	4
03	Investment Analysis and Portfolio Management	Elective - III	2:0:1	3	4

Electives: Group - III

Sl. No	Title of the Course	Elective	L : T : P	Credit	Teaching Hour per week
1	Personal Growth & Interpersonal Effectiveness	Elective – I	2 : 0 : 1	3	4
2	Organizational Change & Development	Elective – II	2 : 0 : 1	3	4
3	Training & Development	Elective - III	2 : 0 : 1	3	4

Electives: Group-IV

Sl. No	Title of the Course	Elective	L : T : P	Credit	Teaching Hour per week
1	Fundamentals of CSR	Elective – I	2 : 0 : 1	3	4
2	Social Development Issues and Challenges	Elective – II	2 : 0 : 1	3	4
3	Corporate Governance and Ethics	Elective - III	2 : 0 : 1	3	4

Electives: Group-V

Sl. No	Title of the Course	Elective	L : T : P	Credit	Teaching Hour per week
1	Tourism Management	Elective – I	2 : 0 : 1	3	4
2	Global Tourism Geography	Elective – II	2:1:0	3	4
3	Hotel Operations & Management	Elective - III	2 :1:0	3	4

Semester - IV

Sl.No	Title of the Course	Core/Elective	L:T:P	Credit	Teaching hour per week
01	Event Management	Core	1:0:2	3	5
02	Elective 4	E	2:0:1	3	4
03	Elective 5	E	2:0:1	3	4
04	Elective 6	E	2:0:1	3	4
05	Elective 7	E	2:0:1	3	4
06	Project	C	0:0:6	6	

Electives: Group-VI

Sl.No	Title of the Course	Elective	L:T:P	Credit	Teaching hour per week
01	Brand Management	Elective - IV	2:0:1	3	4
02	Industrial Marketing	Elective - V	2:0:1	3	4
03	Services Marketing	Elective - VI	2:0:1	3	4
04	International Marketing	Elective - VII	2:0:1	3	4

Electives: Group - VII

Sl.No	Title of the Course	Elective	L:T:P	Credit	Teaching hour per week
01	Merger and Acquisition	Elective - IV	2:0:1	3	4
02	Derivatives	Elective - V	2:0:1	3	4
03	International Finance	Elective - VI	2:0:1	3	4
04	Taxation	Elective - VII	2:0:1	3	4

Electives: Group - VIII

Sl. No	Title of the Course	Elective	L : T : P	Credit	Teaching hour per week
01	Strategic Human Resource Management	Elective - IV	3 : 0 : 0	3	3
02	Industrial Labour Legislation	Elective - V	2 : 0 : 1	3	4
03	Industrial Relations	Elective - VI	2 : 0 : 1	3	4
04	Managing Knowledge Workers	Elective - VII	3 : 0 : 0	3	3

Electives: Group-IX

Sl. No	Title of the Course	Elective	L : T : P	Credit	Teaching Hour per week
01	Brand Management	Elective - IV	2 : 0 : 1	3	3
02	International Business and CSR	Elective - V	2 : 0 : 1	3	4
03	Sustainability & Stakeholder Management	Elective - VI	2 : 0 : 1	3	4
04	Industrial Relations	Elective - VII	2 : 0 : 1	3	3

Electives: Group -X

Sl. No	Title of the Course	Elective	L : T : P	Credit	Teaching Hour per week
01	Travel Agency & Transport Management	Elective - IV	2 : 0 : 1	3	3
02	International Toursm	Elective - V	2 : 0 : 1	3	4
03	Tourism Planning & Development	Elective - VI	2 : 0 : 1	3	4
04	Meeting, Incentive, Conference & Exposition (MICE) Tourism	Elective - VII	2 : 0 : 1	3	3

***L = Lecture – 1 hour of lecture per week in a semester = 1 Credit**

***S/T/FW = Seminars/Tutorials/Field Work – 2 Hours of seminars/tutorial/field work per week in a semester = 1 Credit**

***P = Practical – 2 hours of practical per week in a semester = 1 Credit**

**** Elective Groups:**

Any one group from the available Elective Groups shall be selected by a student at the commencement of III Semester. Once a group has been selected, no change in the selected group will be allowed later in the fourth semester. The Department will announce at the end of the second semester, any one or more Elective Groups which will be offered during III and IV semesters depending upon the availability of faculty members and the demand for elective groups. An Elective Group can be offered if there are minimum ten students opting for that group.

***A student shall register for Business Familiarization Report in third semester which carries 2 credits. In the fourth semester project work must be carried out for preparing the final project work report which carries 6 credits.

Management Theory & Practices

Nature	Area	Semester	
Core	General Management	I	
Course code	Course Name	Credit/Distributions	
21C101	Management Theory & Practices	(L-3:T-0:P-1)Credit=04	
		C1+C2	30Marks
		C3	70Marks

Course Objectives:

- To make students understand fundamental concepts and principles of management, including the basic roles, skills, and functions of management.
- To understand the basic concepts & theoriesof Management
- To enumerate the Importance of various structural forms in organizations
- To understand the importance of various dimensions of controls employed in organizations

Unit –I: Management 16Hours

Management Definition of Management, Nature and Scope of Management, Basic functions of Management, Management as a process. Evolution of management theory and practice from Taylor, Fayol, to the present day. Neo-Classical-Mayo & Hawthorne Experiments. Modern era – system & contingency approach, managerial skills, Professional code of conduct & ethics in management..

Unit– II: Planning & Decision making 10Hours

Nature and purpose, Planning process - Types of plans- Objectives - Managing by Objective (MBO) strategies - Types of strategies & Policies – Decision Making- Types of decision. Process – Decision making under different conditions.

Unit – III:Organizing 10Hours

Nature and purpose of organizing- Organization structure - Line and staff authority Departmentation & Bases of Departmentation - Span of control - Centralization and decentralization- Delegation of authority – Span of Management – Informal Organisation & Grapevine. Impact of Technology on Organisation structure.

Unit– IV: Coordination **10 Hours**

Features of Coordination, Principles of Coordination, Coordination – The Essence of Management, Process of coordination in Management, Elements of coordination,

Unit– V: Controlling 10 Hours

Managerial Control, Relationship between Planning and Control, Limitations of Control, Feedback, Types of Control Systems and Techniques, Management by Exception, Budgetary Control, Functional and Dysfunctional aspects of Budgetary Control, Internal Control Systems,InternalAuditandManagement Audit.

Practical Components:

- Study 5 companies from Manufacturing and Service Sectors and enumerate different types of organizational structures

Visit various websites and collect information on "Inverted Pyramid", "Wirearchy" and "Holacracy".

- Visit 5 companies and study their system of delegation of responsibilities
- Visit 5 companies to study the control systems employed to enhance organizational performance.

Reference Books

- Essentials of Management-Koontz and O'Donnell. E-McGrawHill,
- Introduction to Management-Fred Luthans-McGraw
- The Practice of Managementt Peter.F.Drucker
- The Management

Stoner,FreemenandGilbert

Other Reference Books

1. Don Hellriegel, Susan E. Jackson and John W. Slocum, Management- A competency-based approach, Thompson South Western,11th edition, 2008.
2. Heinz Weihrich, Mark V Cannice and Harold Koontz, Management- A global entrepreneurial perspective, Tata McGraw Hill, 12th edition, 2008.
3. Stephen P. Robbins, David A.De Cenzo and Mary Coulter, Fundamentals of management, Prentice Hall of India, 2012.

Course Outcome:

CO1. Acquire the conceptual knowledge of Management, various functions of Management.

CO2. Apply managerial knowledge in real world situations.

CO3. Develop a greater understanding about Management.

CO4. Demonstrate their exposure on recent trends in management.

CO5. Ability to understand the management process in the corporate world.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	-	-	2	2	2	-	3	2	3	-
CO2	3	2	2	3	2	1	-	1	3	-	3	-
CO3	3	2	2	1	2	1	1	2	3	2	3	-
CO4	2	-	2	-	3	2	-	-	3	2	3	3
CO5	2	-	3	2	3	2	-	-	3	2	3	2
Weighted Average	2.4	2	2.25	2	2.4	1.6	1.5	1.5	3	2	3	2.5

ORGANIZATIONAL BEHAVIOR

Nature	**Area**	**Semester**	
Core	**Human Resource**	**1**	
Course Code	**Course Name**	**Credit/Distribution**	
22C102	**Organizational Behavior**	**(L-3:T-0:P-1) Credit=04**	
		C1+ C2	**30 marks**
		C3	**70 marks**

Course Objectives

1. To Analyze the behavior of Individuals and Groups in organization in terms of the Key Factors that influence Organizational behavior
2. To Assess the potential effect of organizational factors (Structure, Culture, Change) on OB
3. To Critically examine the potential effects of important developments in external environments on OB
4. To Analyze the organizational behavior issues in the context of Organizational Behavioral theories, Models and Concepts

Unit I: Organizational behavior **08 Hours**

Definition, Key elements of OB, Nature, scope and challenges of OB, Models of organizational Behavior, Contributions of other disciplines to OB, Emerging issues in Organizational Behavior, Impact of globalization and IT on OB

Unit II: Personality, perception and attitudes 15 Hours

Personality: Meaning, Determinants of Personality – Heredity, Environment and Situation

Types of personality – Introvert, Extravert, Type A, Type B, Judging and perceptive personality,

Theories of personality – Trait theory, Type theory, Socio Learning theory, Self theory, Psycho-analytical theory, Other personality factors influencing OB–Locus of control, Machiavellianism, Self esteem, self monitoring, Risk taking.

Perception: Meaning, difference between perception and sensation, perceptual Process – Receiving the stimuli, selecting the stimuli, organization of stimuli, Interpretation, Factors influencing perception – Internal factors and External factors, How to improve perception, Perception and its application in OB (Employment Interview, Performance appraisal, Performance expectation, employee effort, employee loyalty)

Attitude: Meaning of Attitude, Formation of attitude (Direct experience, Social learning), Types of attitude: Job satisfaction, Job Involvement and Organizational commitment. Components of Attitude: Cognitive component, affective component and behavioral component, How to change attitude (Cognitive dissonance theory, Reinforcement theory, balance theory, comprehensive theory).

Unit III: Group dynamics: 10 Hours

Meaning, Definition and characteristics, why do people form and join groups, Types of Groups: Formal and informal groups, Stages of group development, Group Behavior, Group Norms, Group Cohesiveness, group role, Inter group behavior, Inter group conflicts, Group Decision making, JOHARI window and Transactional analysis.

Teams: Meaning, Difference between team and Group, Types of teams

Lead teams, Problem solving teams, self managed teams, cross functional teams, virtual teams, Causes for team failure, How to make teams successful?

Unit IV: Motivation 13 Hours

Meaning, Nature of motivation, Need for motivation, Theories of motivation – Content theories and Process theories,

Unit V: Leadership 10 Hours

Meaning, Differences between leadership and Management, functions of leadership, Leadership styles – Autocratic, Democratic, Laissez faire.

Leadership theories: Trait theory, Behavioral theories, Fiedler's contingency model, Path goal leadership theory, Situational leadership theory, Managerial grid, Transactional and Transformational leader- ship, Making leadership effective.

Practical Component:

1. Preparing the leadership profiles of five business leaders and studying their leadership qualities and behaviors.
2. Identifying any five job profiles and listing the personality traits / attributes required for the jobs identified.
3. Dividing the students into small groups and conducting collage activity to exhibit the group cohesiveness.

Text Book:

1. Dr. S.S. Khanka.(2003). Organizational Behavior. (4th ed.) S. Chand & Company Pvt. ltd.
2. Fred Luthans. (2010). Organizational Behavior an evidence based approach. McGrawhill, (12th Ed.).
3. Stephen Robbins. (2016). Organizational Behavior. Pearsons (16th Ed.).

After the completion of the course, students will be able to:

1. Analyze the behavior of individuals in organization.
2. Critically examine the potential effects of behavioral issues on organization.
3. Distinguish between Teams and Groups and devise methods to enhance their functioning.
4. Identify and develop techniques to motivate individuals.
5. Assess Leadership qualities and abilities required to sustain.

CO / PO ARTICULATION MATRIX

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	1	3	3	2	-	3	-	1	3
CO2	2	3	3	3	2	3	3	1	3	-	3	3
CO3	3	3	3	3	3	2	2	1	3	1	2	1
CO4	3	3	3	3	3	2	1	2	3	3	1	2
CO5	3	1	3	3	3	3	3	1	3	1	2	3
W.A	**2.6**	**2.6**	**3**	**2.6**	**2.8**	**2.6**	**2.2**	**1**	**3**	**1**	**1.8**	**2.4**

CORPORATE ECONOMICS

Nature	Area	Semester	
Core	General management	1	
Course Code	Course Name	Credit/Distribution	
22C103	Corporate Economics	(L-3:T-0:P-1) Credit=04	
		C1+ C2	30 marks
		C3	70 marks

Course Objectives:

1. **To Implement Analytical Tools**
2. **To Analyse business goals**
3. **To make new business or product decisions**

Unit I: Introduction **08 Hours**

Definition, nature and scope of managerial economics, Theory of the firm- goals of the firm, indifference curve analysis, and Equilibrium Analysis

Unit II: Demand Analysis 08Hours

Concept of demand, determinants of demand, Law of demand, Exceptions to the law of demand, Elasticity of demand, types and measurement

Unit III: Production and Cost Analysis **14 Hours**

Concepts, production function with one variable input - Law of Variable Proportions. Production functions with two variable inputs and Laws of returns to scale. Cost analysis: Concepts, Types of cost, Cost curves, Cost – Output Relationship in the short run and in the long run, LAC curve.

Unit IV: Market Structures **12 Hours**

Market Structures: Perfect Competition, Features, and Determination of price under perfect competition Monopoly: Features, Pricing under monopoly. Price Discrimination

Monopolistic Competition: Features, Pricing Under monopolistic com- petition, Product differentiation. Oligopoly: Features, Kinked demand Curve, Cartels, Price leadership

Unit V: Regression model for

managerial decisions **14 Hours**

: Introduction to Regression Analysis, Estimating and Testing Regression Equation, Problems in the Use of Regression Analysis, Two-Variable Regression Analysis.

Practical Components:

1. Study of demand elasticity for a product when there is a price increase or price decrease.

Reference Books:

1. Thomas ,Christopher R & S Maurice ,Charles (2008) Managerial Economics – Concepts and Application, New Delhi: Tata McGraw-Hill Irwin
2. Donald .N. Stengel (2011), Managerial Economics, Concepts and principles, Newyork: Business expert press
3. D.N Dwivedi (2011), Managerial Economics, Vikas publishing house pvt ltd.
4. Dominick Salvatore (2015), Managerial Economics in a global economy, Oxford university press
5. G.S Gupta (2011), Managerial Economics, Tata MC Graw Hill.

Course Outcome:

CO1: To analyze the roles of managers in firms

CO2: To design the internal and external decisions to be made by managers

CO3: To think about the demand and supply conditions and assess the position of a company

CO4: Design competition strategies, including costing, pricing, product differentiation, and market environment

according to the natures of products and the structures of the markets.

CO5: Make optimal business decisions by integrating the concepts of economics, mathematics and statistics

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	2	1	2	2	2	3	3	2	2	2
CO4	3	2	3	3	2	3	3	2	2	2	3	3
CO5	2	2	1	2	2	3	2	1	2	1	2	2
Weighted Average	2.8	2.2	2.4	2.4	2.4	2.8	2.6	2.4	2.8	2.2	2.6	2.6

ACCOUNTING FOR MANAGERS

Nature	**Area**	**Semester**	
Core	**Accounts**	**1**	
Course Code	**Course Name**	**Credit/Distribution**	
22C104	**Accounting for Managers**	**(L-3:T-1:P-0) Credit=04**	
		C1+ C2	**30 marks**
		C3	**70 marks**

Course Objectives:

1. To acquaint students with the fundamentals principles of financial, cost and management accounting
2. To enable the students to prepare, analyze and interpret financial statements and to enable the students to take decisions using management accounting tools.
3. To understand the basic concept of taxation.

Unit – 1: Introduction & Preparation of books of Accounts – 06 Hours

Meaning and Scope of Accounting; Accounting Concepts and Conventions, Journals, Ledgers and Trial Balance Depreciation: Meaning, characteristics and causes of depreciation, Types of Depreciation (Problems only on straight line and WDV method).

Unit II: Final Accounts of Companies & Non – Profit organisation – 15 Hours

Preparation of final accounts of companies in vertical form as per Companies Act of 2013 with Appropriation accounts. (Problems) - Window dressing.

Preparation of Final Accounts of Non – Profit Organisation

Unit III: Analysis of Financial Statements – 15 Hours

Financial Statements – Meaning and concepts, Nature of financial statements – Objectives – Limitations of Financial Statements – Types of Analysis and Interpretation – Horizontal analysis, vertical analysis,

Comparative Financial Statements, Common size statements, Trend Analysis.

Accounting ratios – Meaning, Uses and Limitations – Calculations of various ratios.

Unit IV: Cash Flow Statement – 12 Hours

Preparation of Cash flow Statement (Indirect method) under AS – 3

Unit V: Direct and Indirect Tax (Theory only) – 8 Hours

Direct Tax – Basic Concepts – Various heads of Income – Tax Planning & Tax evasion

Indirect Tax – Introduction – GST – Advantages and disadvantages – Types of GST returns and their due dates – Composition Tax Payer – Registration under GST – Unique Identification Number

Practical Components

1. To collect Annual reports of the companies and analyze the financial statements using different techniques and presenting the same in the class.
2. To analyze the companies' cash flow statements and presenting the same in the class.
3. To identify the sustainability report of a company and study the contents.

Reference Books:

1. Accounting for Managers: Raman B. S, United Publishers.
2. A Text book of Accounting For Management: Maheswari S.N, Maheswari Sharad K. Maheswari, 2/e, Vikas Publishing house (P) Ltd.
3. Accounting for Management: Arora M.N., Himalayan Publishing House Pvt. Ltd.
4. Financial Accounting: A Managerial Perspective, Narayanaswamy R, 5/e, PHI, 2014.
5. Goods and Service Tax with Customs Law: Srinivas K.R, Jayaprasad D & Bhavani M., Kalyani Publications.
6. Accounting for Managers, J. Madegowda, Himalaya Publishing House.

Course outcomes:

- Demonstrate the applicability of the accounting principles to prepare the accounting to understand the managerial decisions.
- Demonstrate the applicability of the depreciation concept to prepare report and take the managerial decisions.
- Prepare the final account reports with the accounting tools and concept and facilitate to take managerial decisions.
- Apply the financial statement analysis associate with financial data in the organization.
- Application of accounting standards prepare the accounting and statement.

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	1	1	1	1	3	2	3	3	2
CO2	3	2	3	3	3	1	1	1	2	3	3	2
CO3	3	2	3	3	3	1	1	1	2	3	2	2
CO4	3	2	3	3	3	1	1	1	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
Weighted Average	3	2	3	2.6	2.6	1	1	1.8	2	3	2.8	2

BUSINESS COMMUNICATION

Nature	Area	Semester	
Core	General Management	1	
Course Code	Course Name	Credit/Distribution	
22C105	Business Communication	(L-2:T-0:P-1) Credit=03	
		C1+ C2	30 marks
		C3	70 marks

Course Objectives:

1. To familiarize students with the mechanics of writing
2. To enable students to communicate (Written and Oral) in English precisely and effectively

Unit I: Introduction **12 Hours**

Introduction: Meaning & Definition, Importance of communication in management, Purpose of communication, Communication Process, Shannon – Weaver Model, Characteristics of successful communication, Communication in conflict resolution, Communication in crisis, Cost of poor communication, Committing to legal and ethical communication.

Unit II: Oral communication: **12 Hours**

Oral communication: Meaning, Principles of successful oral communication, three aspects of oral communication, conversing, listening, and body language, Conversation control, Non – verbal communication, Communicating in diverse workgroups, Barriers to communication, Suggestions to overcome the barriers.

Unit III: Written communication **10 Hours**

Written communication: Purpose of writing – Clarity in writing – Principles of effective writing, Approaching the writing process systematically: The 3X3 writing process for business communication: Pre writing – Writing – Revising – Specific writing features – Coherence – Electronic writing process, Positive, negative, and persuasive writing.

Unit IV: Business letters and reports **10 Hours**

Business letters and reports: Introduction to business letters – Types of Business Letters, Purpose, Writing Reports:

Objectives of reports, Organization and Preparing reports, Types of reports, Writing Proposals: Structure & preparation. Writing memos, Writing for websites.

Unit V: Case method of learning **12 Hours**

Case method of learning: Understanding the case method of learning – Different types of cases Difficulties and overcoming the difficulties of the case method – Reading a case properly, (previewing, skimming, reading, scanning) – Case analysis approaches (Systems, Behavioural, decision, Strategy) – Analyzing the case – Do's and don'ts for case preparation – Discussing and Presenting a Case Study

A suitable case is to be selected and administered in the class sticking to all the guidelines of case administering and analysis.

Reference Books:

1. Business Communication: Concepts, Cases And Applications – P D Chaturvedi, Mukesh, Chaturvedi – Pearson Education, 2/e, 2011 (Module 1, 2, 4, 5, &7)
2. Business Communication, Process And Product – Mary Ellen Guffey – Thomson Learning , 3/E, 2002 (Module 3)
3. Business Communication – Lesikar, Flatley, Rentz&Pande – TMH 11/E, 2009 (Module 1, 2, 4, 5, & 7)
4. Advanced Business Communication – Penrose, Raspberry, Myers – Cengage Learning, 5/e, 2004 (Module 1, 5, 6 & 8)
5. BCOM – Lehman, DuFrene, Sinha – Cengage Learning, 2011 (Module 1, 2, 4, 6, 7, 8)
6. Business Communication Today – Bovee and Thill, Pearson.
7. Effective Technical Communication - M Ashraf Rizvi – TMH, 2005.
8. Business Communication, M.K. Sehgal & V. Khetrapal – Excel Books.

Business Communication – Krizan, Merrier, Jones – Thomson Learning, 6/e, 2005.

Business Communication Today – Bovee and Thill, Pearson

Course Outcomes:

1. familiarize students with the technicalities of writing
2. Enable students to communicate (Written and Oral) in English language precisely and effectively

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	3	3	2	3	2	3	2	3	2
CO2	2	3	2	2	2	2	2	2	2	2	3	3
Weighted Average	2.5	2.5	2.5	2.5	2.5	2	2.5	2	2.5	2	3	2.5

STATISTICS FOR MANAGEMENT

Nature	**Area**	**Semester**	
Core	Statistics	I	
Course Code	**Course Name**	**Credit/Distributions**	
22C105	Statistics for Management	(L-3:T-0:P-1)Credit=04	
		C1+C2	30Marks
		C3	70Marks

Course Objectives:

- This course is designed to introduce the student to statistical methodology useful for data analysis and managerial decision-making. Emphasis will be placed on applications through working examples and computer-assisted data analysis in lab sessions.

Course Outcomes:

- Appreciate that the collection and statistical analysis of data improves business decisions and reduces the risk of implementing solutions that waste resources and effort.
- Select and deploy the correct statistical method for a given data analysis requirement.
- Achieve a practical level of competence in building statistical models that suit business applications.

Unit I: Introduction 10 Hours

Quantitative data interpretation in managerial decision making: collection – classification – tabulation – frequency distribution – charts and graphs, measures of central tendency and measures of dispersion; Coefficient of Variation.

Unit II: Correlation and regression 10 Hours

Types of correlation: Scatter diagram: Karl Pearson coefficient of correlation: Spearman rank correlation coefficient – repeated ranks. Regression coefficients; Lines of regression.

Unit III: Probability Theory 12 Hours

Basic Probability concepts. Counting rule for determining number of outcomes- Permutation and Combination. Conditional probability, Bayes theorem. Probability distributions - binominal distribution, Poisson distribution and normal distribution.

Unit IV: Sampling Techniques 08 Hours

Census and Sampling; Non-sampling and sampling errors. Probability sampling techniques and Non-probability sampling Techniques, sample size. Estimation: point estimation and interval estimation – definition

Unit V: Statistical Decision Theory 16 Hours

Hypothesis testing for mean and proportion: One sample and two samples test (z-test and t-test). Chi-square test – Goodness of Fit and Independence of Attributes. Analysis of Variance: One - way and two - way ANOVA.

Concept of Business Analytics – meaning, types and application of Business Analytics. Use of Spread sheet to analyze data – Descriptive Analytics and Predictive Analytics.

Practical components:

1. Data entry in Excel sheet and carryout descriptive statistics and interpretation of data.
2. Correlation analysis and regression analysis of the assigned data.

Reference Books:

1. Dr. C.K Renukarya-Business Statistics, Chethan Book House, Mysore
2. Statistics for Managers – using Microsoft excel – Levine, Stephan & others 9th edition, Pearson (2021)
3. Statistics for Management – Richard Levin and Rubin[excel version] 8thadition, Pearson (2017)
4. Statistics – Murray Spiegel, Schaum Series. 5th edition (2017)
5. Quantitative Business Analysis – Text & Cases – Samul Bodiley & others. Mcgrawhill edition (16th January 1998)
6. Basic Business Statistics – Bereuram and Levine. 13th edition, Pearson (2015)
7. Quantitative Methods – Anderson, Sweeny & William. Cengage (2016) 13th edition
8. Statistical Techniques in Business and Economics – Douglas A. Lind, William G. Marchal and Samuel A. Wathen, 15th edition, McGraw-Hill (2012)

After the completion of the course, Students will be able to:

CO1: Use Tabular, Diagrammatic, and Graphical presentation in Managerial decision Making.

Implementation of Summary statistics in decision making.

CO2: Derive Problem – Solution by using Correlation analysis and Regression analysis.

CO3: Make use of Probability and Distribution in Sequential Managerial analysis.

CO4: Demonstrate data collection through various Sampling techniques.

CO5: Implement Statistical decision theory for Managerial Research problems.

CO	PO											
	1	2	3	4	5	6	7	8	9	10	11	12
1	1	3	2	3	2	1	1	-	-	1	2	1
2	1	3	2	3	2	1	1	-	-	1	2	1
3	1	3	2	3	2	1	1	-	-	1	2	1
4	1	3	2	3	2	1	1	-	-	1	2	1
5	1	3	2	3	2	1	1	-	-	1	2	1
Weighted Average	1	3	2	3	2	1	1	-	-	1	2	1

COMPUTER APPLICATIONS IN MANAGEMENT

Nature	**Area**	**Semester**	
Foundation	**General Management**	**I**	
Course Code	**Course Name**	**Credit/Distributions**	
22C107	**Computer Applications in Management**	**(L-0:T-0:P-1)Credit=01**	
		C1+C2	5+ 5 Marks
		C3	40 Marks

Course Objectives:

1. To provide students with the essential skills needed to create, edit and print professional looking documents using text, tables, lists and pictures as well as covering simple mail merge.

2. To equip students with the skills required to create & edit spreadsheets, use functions & formulas and to work with various tools to analyze and present data in spreadsheets, such as sorting, filtering, applying conditional formatting and charting the data.

3. To provide students with the essentials skills needed to create, edit and present professional looking presentations using text, tables, diagrams, charts and pictures as well as providing presentations tips.

Unit I: Information System Resources **04 Hours**

Word processing with MS word - starting MS word - MS Environment - working with word documents - working with text - working with tables - checking spelling and grammar - printing document - creating mailing lists- mail and merge.

Unit II: Concept of spread sheet and MS Excel 08 Hours

Starting MS Excel - MS Excel Environment-working with Excel – workbook- Preparation of charts and graph with excel – Sorting & Filtering - Working with functions – Summary statistics – printing in Excel.

Unit III: Making Presentation with

MS Power Point **04 Hours**

Starting MS Power point - MS Power point Environment - working with power point - working with different views - designing presentations - printing in power point.

Practical Component

1. Hands on sessions to create, edit and print word documents using text, tables, lists and pictures as well as covering simple mail merge.
2. Hands on sessions to create & edit spreadsheets, use functions & formulas and to work with various tools to analyse and present data in spreadsheets, such as sorting, filtering, applying conditional formatting and charting the data.
3. Hands on sessions to create and edit PowerPoint slides using text, tables, diagrams, charts and pictures and presenting the slides.

Text Books:

1. Kumar Bittu.*Mastering MS Office.* V & S Publisher
2. SaxsenaSanjay.*MS Office 2000.*Vikas Publishing House,

Reference Books:

1. Sanjay Saxsena – A First Course in Computer – Vikas Publishing
2. Sanjay Saxsena: MS Office 2000; Vikas Publishing House
3. Esssentials of E – Commerce & Technology, Rajaraman V, PHI Learning
4. Management Information Systems : A Contemporary Perspective – Laudon Kenneth & Loudon Jane
5. Management Information Systems : A Conceptual Foundation – Mc Graw Hill

Course Outcomes:

1. Perform intermediate tasks in Microsoft Excel
2. Apply advanced tools in Microsoft PowerPoint and Microsoft Word

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	3	2	3	2	3	3	3	2
CO2	2	3	2	3	3	2	2	2	2	2	3	3
Weighted Average	2.5	2.5	2	3	3	2	2.5	2	2.5	2.5	3	2.5

SKILL DEVELOPMENT – 1

Nature	**Area**	**Semester**	
Foundation	**General Management**	**I**	
Course Code	**Course Name**	**Credit/Distributions**	
22C108	**SkillDevelopment-1**	**(L-0:T-0:P-1)Credit=01**	
		C1+C2	5+ 5 Marks
		C3	40Marks

Course Objectives:

1. To provide an analytical and practical overview of the basic skills needed for a manager
2. To comprehend the art of presentation, e-mail etiquette and data interpretation

Unit I: Presentation Skills **03 Hours**

Technical aids used for presentation; Chalk and Board, Over head Projectors, Paper Handouts, Flip Chart, Artifacts or Props, basic Understanding of PowerPoint

Unit II: Advanced Presentation Skills **03 Hours**

Rules and Guidelines for creating a good Presentation, The beginning, Actual content and closing of a Speech, Holding audience attention and Handling Questions

Unit III: Email Etiquettes **04 Hours**

Subject & Body of an email, Rules of emails: No Spamming, Disclaimer etc.

Guidelines of an email: Reply, Reply all, Forward etc., Mass Mail service providers like Mail Chimp etc.

Unit IV: E-Mail Analytics 03 Hours

Analytics like Click through Rate, Open rate, Opt out Rates etc., Email Threats like Phishing and Spamming

Unit V: Data Interpretation **03 Hours**

Basic interpretation of graphical representation of data, Basic Interpretation of Percentage based data.

Course outcomes:

1. Familiarize oneself with basic skills needed for a manager.
2. Comprehend the art of presentation, e-mail etiquette and data interpretation

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	-	1	1	-	-	-	2	2	3	2	2
CO2	2	-	-	-	-	-	-	2	1	3	1	2
W.A	2.5	-	0.5	0.5	-	-	-	0.8	0.6	1.2	0.6	0.8

Second Semester

MARKETING MANAGEMENT

Nature	**Area**	**Semester**	
Core	**General Management**	**II**	
Course Code	**Course Name**	**Credit/Distributions**	
22C201	**Marketing management**	**(L-3:T-0:P-1) Credit = 04**	
		C1 + C2	**30 Marks**
		C3	**70 Marks**

Course Objectives:

1. To be able to analyze various Marketing Concepts
2. To Identify the criteria of Consumer Behaviour Process
3. To evaluate the difference between Consumer Marketing and Business Marketing
4. To appreciate the Brand Concept inevitability

Unit I: Introduction to Marketing Management 12 Hours Introduction to Marketing Management: Differences between Selling and Marketing, Scope & nature of Marketing Management, Classification of various products/services. Various Marketing concepts, Different types of Marketing environment, elements of Marketing Mix.

Unit II: Nature of Consumer Behavior 10 Hours

Nature of Consumer Behavior: Various steps in consumer & Buyer Behavior Process, Models of Consumer Behavior. Fundamentals of Marketing Research, Marketing Information System.

Unit III: Test Marketing, Concept of Segmentation, Targeting & Positioning 10 Hours

Test Marketing, Concept of Segmentation, Targeting & Positioning: Basis for Segmentation.Differences between Consumer Marketing and Business Marketing.

Unit IV: Product Mix and Product Line 12 Hours

Product Mix and Product Line, Product Portfolio, Product Life Cycle strategies.Branding, types of Brands, Brand Building, measuring Brand Equity.Packaging and Labeling. Pricing, General Pricing approaches, new Product

Pricing strategies, Public Policy and pricing.

Unit V: Elements of Promotion Mix **12 Hours**

Elements of Promotion Mix, Marketing Communication Process, Internet Marketing, E-tailing, Levels and Strategies of Distribution Channels, Scope of Logistics Management.

Practical Components:

1. Consider the products of your favorite like, smart phones, Cars and appreralsetc to analyze the Buying Behaviour.
2. Analyze the various restaurants in city – how are they segmented? If you were to start a new restaurant, how would you position it? What would your parameters?
3. Analyze the product life cycle of a few common products like jeans, Laptops, Computers etc.
4. Visit a supermarket and study the pricing, packaging and advertising strategy of some FMCG companies like HUL, ITC, Britannia, Parle, and others in some products like Incense Stick, Soaps, Biscuits etc.

Reference Books:

1. Marketing Management – Philip Kotler, Prentice Hall India, (New edition)
2. Basic Marketing – Perault
3. Fundamentals of Marketing – William Stanton
4. Principles of Marketing – Philip Kotler and Garry Armstrong
5. Marketing Management – RajanSaxena
6. Marketing Management – Zickmund
7. Marketing – Ramesh Kumar
8.

Course Outcomes:

1.Identify, define and analyze the marketingproblems

2 Develop skills to Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	3	3	2	2	2	3	2	3	2
CO2	3	3	2	3	3	2	2	2	2	2	3	3
W.A	2.5	2.5	1.5	3	3	2	2	2	2.5	2	3	2.5

HUMAN RESOURCE MANAGEMENT

Nature	Area	Semester	
Core	Human Resource	II	
Course Code	Course Name	Credit/Distributions	
22C202	Human Resource Management	(L-3:T-0:P-1) Credit = 04	
		C1 + C2	30 Marks
		C3	70 Marks

Course objectives

1. To demonstrate the Knowledge and Skills needed to effectively manage Human Resource in organization
2. To describe the Trends in the Labor force composition and how they affect HRM
3. To describe the fundamental concepts, Rules of Law that apply to business activities, employment functions and labor
4. To demonstrate Knowledge of Human Behavior in organization and role of Management Strategies, including Motivation theory to influence Behavior
5. To compare the common methods for recruiting and selecting Human Resource
6. To Integrate Teamwork, Leadership and Motivational skills to organizational scenarios

Unit I: Introduction **10 Hours**

Introduction: Evolution and Development of HRM, Meaning of HRM, Definition, Nature and scope of HRM, personnel v/s HR, features of HRM, role of HRM, managerial functions and operative functions, objectives of HRM, HRM policies procedures and programmes, organization of HRM: line and staff relationship, HR manager, qualities of HR / personnel manager, Recent trends in HRM.

Unit II: HR Planning, Recruitmentand Selection **15 Hours**

HR Planning, Recruitment and Selection: Job analysis – Need for Job analysis, process of Job analysis, Techniques of data collection for job analysis, Job Description and Job specification, Components of jobdescription and job specification, Benefits of job analysis, HRP: Meaning, Objectives, and Benefits of Human Resource Planning. Factors affecting HRP – External Factor, Internal Factors, Process of Human Resource Planning, Recruitment – Definitions and Objectives, process of recruitment, Recruitment policy, Centralized versus Decentralized recruitment, sources of

Recruitment – Internal and external sources of recruitment. Selection: Meaning, Steps in Selection Process – Preliminary screening, Application Blank, Selection Tests, Selection Inter- view, Reference Checks, Physical examinations, Final selection. Placement – meaning and definition, Induction – Meaning, objectives and benefits, Contents of induction program – Formal and informal induction, Differences between induction and orientation programs.

Unit III – Training and Development **10 Hours**

Training and Development: Meaning and definition of training, Objectives of Training, Need for training, benefits of training, Differences between training and development, Training methods – on the job and off the job training methods, Training procedure - identification of training needs, Training Design and delivery, Training evaluation – Reaction, Learning, Behaviour and Results.

Unit IV – Performance Management **10 Hours**

Performance management: Introduction, Meaning and Definition, Objectives of performance Appraisal, Methods of Performance Appraisal - Traditional methods and Modern methods, 360 degree performance appraisal, Uses and Limitations of Performance Appraisal, Potential appraisal, Differences between performance and potential appraisal.

Unit V - Compensation Planning **11 Hours**

Compensation planning: Meaning, Objectives of Wage and salary ad-ministration, Components of wage and salary administration, Methods of wage payment, perks, Fringe benefits, Benefits: Types of benefits, Incentives: Types of incentive schemes – Individual incentives and Group incentives, Making Incentives and Benefits more effective.

Practical Component

1. Give a job analysis case and ask the students to prepare job description and job specification.
2. Plan an advertising layout for the recruitment of the position of sales manager.
3. Ask the students to prepare an appointment letter for the post of sales manager of a company.

Text Books

1. Dr. S Khanka. (2013).*Human resource management.* S Chand
2. P SubbaRao . (2015). *Human Resource Management*.(5thReviseded.). Himalaya Publication

Reference Books

1. K Ashwathappa.(2017). *Human resource management*, (8th ed.). Mcgrawhill

2. VSP Rao. (2016).*Human Resource Management.* Taxmann Publications

3. Keith Davis. (1985). *HR and personnel management*, Tata Mc Grawhill

4. Flippo. (1980).*Personnel management*. Tata Mc Graw hill

Course Outcomes:

CO1.Ability to plan human resources and develop competency in job analysis.

CO2. Competency to recruit and select employees.

CO3. Competency to train people and evaluate training.

CO4. Ability to design appraisal performance system and appraising employees performance.

CO4. Design of compensation and salary administration.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	-	-	3	3	3	-	1	2	3	2	2
CO2	3	-	2	2	2	2	-	3	3	2	2	-
CO3	3	-	3	-	3	2	-	2	3	3	3	3
CO4	3	2	3	3	3	2	-	3	3	3	2	-
CO5	3	3	3	2	-	3	-	2	3	-	2	-
Weighted Average	3	2.5	2.75	2.5	2.75	2.4	-	2.2	2.8	2.75	2.2	2.5

CORPORATE FINANCE

Nature	**Area**	**Semester**	
Core	**Human Resource**	**II**	
Course Code	**Course Name**	**Credit/Distributions**	
22C203	**Corporate Finance**	**(L-3:T-0:P-1) Credit = 04**	
		C1 + C2	**30 Marks**
		C3	**70 Marks**

Course Objectives:

1. To familiarize the students with basic concepts of financial management.
2. To understand time value of money and cost of capital.
3. To analyze capital structure, capital budgeting and dividend decision.
4. To understand the short term and long term financing and working capital management.

Unit I: Financial Management **08 Hours**

Introduction to financial management, objectives of financial management – profit maximization and wealth maximization; Nature of basic managerial finance functions – investing, financing and dividend; Agency problems(Issues and Conflicts) ; Time value of money, the concepts of compounding, discounting and present value, annuities(Problems)

Unit II: Valuation of long term Securities **10 Hours**

Distinction among valuation concepts; Bond valuation-bond yields (Current yield, YTM)-Bond market; Valuation of preference stock, Equity valuation -Dividend discount model- P/E ratio approach

Unit III: Investment Decisions **16 Hours**

Cost of Capital Cost of capital – basic concepts. Cost of debenture capital, cost of preferential capital, cost of equity capital (Dividend discounting and CAPM model) - Cost of retained earnings - Determination of Weighted average cost of capital (WACC) and Marginal cost of capital

Capital Budgeting – Capital budgeting process, Investment evaluation techniques – Net

present value, Internal rate of return, Modified internal rate of return, Profitability index, discounted payback period, Payback period, accounting rate of return

Unit IV: Dividend policy –
Theories of dividend policy **12 Hours**

Relevance and irrelevance dividend decision, Walter's & Gordon's model, Modigliani & Miller approach. Dividend policies – stable dividend, stable payout and growth, Bonus shares and stock split corporate dividend behavior. (Theory and Problems)

Unit V - Working Capital Management 10 Hours

Factors influencing working capital requirements - Current asset policy and current asset finance policy- Determination of operating cycle and cash cycle - Estimation of working capital requirements of a firm (Does not include Cash, Inventory & Receivables Management)

Practical Components:

1. Identifying the small or medium sized companies and understanding the Investment evaluation techniques used by them.
2. Using the annual reports of selected companies, students can study the working capital management employed by them. Students can also compare the working capital management of companies in the same sector.
3. Students can choose the companies that have gone for stock split and Bonus issue in the last few years and study the impact of the same on the stock price.

Text books:

1. Khan M. Y.& Jain P. K(2011), Financial Management 6/e, TMH
2. Prasanna Chandra (2011),Financial Management – 8/e, TMH

Reference Books:

1. Shashi K Gupta and R K Sharma(2014), Financial Management 8th RevisedEdition, Kalyani Publishers.
2. Rajiv Srivastava and Anil Misra(2011) Financial Management Second edition,Oxford University Press.
3. I M Pandey(2014),Financial Management 10th Edition, Vikas Publishing House

Course Outcomes:

- Demonstrate a comprehensive knowledge of applicability of time value of money
- Analyse and valuation of various securities which are traded in Indian stock market
- Analyse and evaluate long term capital investment and analyse cost of capital to take managerial decision.

- Equipped with the knowledge of dividend decision
- Analyse and estimate working capital requirement for carrying day to day business in an organisation.

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	2	2	1	1	3	2	1	2	1
CO2	3	2	3	3	3	1	1	3	2	1	2	1
CO3	3	2	3	3	3	1	1	3	2	2	2	1
CO4	3	2	3	3	3	1	1	3	1	2	2	1
CO5	3	2	3	3	3	1	1	3	1	2	1	1
W.A	3	2	3	2.8	2.8	1	1	3	1.6	1.6	1.8	1

BUSINESS RESEARCH METHODS

Nature	Area	Semester	
Core	General Management	II	
Course Code	Course Name	Credit/Distributions	
22C204	Business Research Methods	(L-3:T-0:P-1) Credit = 04	
		C1 + C2	30 Marks
		C3	70 Marks

Course Objectives:

To develop a research orientation among the students and to acquaint with fundamentals of research methods. The course aims to introduce the basic concepts used in research, the scientific social research methods and their approaches.

Course Outcomes:

1. To develop an understanding of the basic framework of research process.
2. To develop an insight into various research designs and techniques.
3. To understand some basic concepts of research and its methodologies
4. To be able to write research report and thesis independently

Unit I: Research in Business: 08 Hours

Role of business research, Information systems and knowledge management, Theory building, Overview of Research process, Ethical issues in business research.

Unit II: Problem Formulation 10 Hours

Problem definition and research proposal, Basic research designs– Exploratory, descriptive and causal designs. Secondary data research designs. Qualitative analysis, Secondary data.

Unit III: Survey 12 Hours

Basic concepts in survey research, Methods of communication with respondents, Questionnaire, Interview, Observation method, Experimental research. Measurement and scaling concepts, Principles of questionnaire design.

Unit IV: Sampling Design and Methods 08 Hours

Sampling design and methods: Sample design and sample procedures, Determination of sample size.

Unit V: Data Analysis and Presentation 18 Hours

Data Analysis and Presentation: Editing and coding for transformation of raw data into information, Basic data analysis – descriptive statistics, Univariate analysis-z-test, t-test. Bivariate analysis: Measures of association.Presentation of research findings- report writing

Practical components

1. Students shall independently develop questionnaire for research problems assigned to them.
2. Understand and analyze the project report prepared by senior students and discuss.

Reference Books:

1. Business Research Methods – William G. Zikmund, Burry J. Babin, Jon C. Carr, Mitch Griffin Cengage Learning India. 9th Edition (2012)
2. Business Research Methods - Pamela S Schindler, McGraw-Hill, 13th edition (2021)
3. Business Research Methods - Donald R. Coopers and Pamela S Schindler, McGraw-Hill, 9th edition (2013)
4. Research Methodology: Methods and Techniques - C. R. Kothari, New Age International, 4th edition (2004)
5. Foundations Of Behavioural Research - Fred N. Kerlinger 2nd edition Surjeet Publications (2019)

1. Management decision making.
2. CO2: Develop and design Research Proposal.
3. CO3: Develop the skill to construct the Structures questionnaire and comprehend Research Methodology.
4. CO4: Devise tools and methods for data collection using Sampling techniques.
5. CO5: Develop the skill for data analysis and interpretation and presentation of research report.

CO	PO											
	1	2	3	4	5	6	7	8	9	10	11	12
1	2	2	3	3	2	2	2	-	-	2	2	1
2	-	3	3	3	2	1	2	-	-	1	-	1
3	-	3	3	3	3	1	2	-	-	1	-	1
4	-	3	3	3	3	1	2	-	-	1	-	1
5	-	3	3	3	3	1	2	-	-	3	1	1
Weighted Average	2.0	2.8	3.0	3.0	2.6	1.2	2	-	-	1.6	0.6	1.0

OPERATIONS MANAGEMENT

Nature	**Area**	**Semester**	
Core	**General Management**	**II**	
Course Code	**Course Name**	**Credit/Distributions**	
22C205	**Operations Management**	**(L-3:T-1:P-0)Credit=04**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course Objectives:

1. To understand the role of operations management in the overall business strategy of the firm and moving towards business leadership.
2. To understand the interdependence and relationship of the operations function with other key functional areas of the firm.
3. To learn and apply different quantitative tools and techniques for decision making in operations management.

Unit I: Introduction to Operations Management **12 Hours**

Definitions, Key elements, Differences Between Services and Goods, OM's link with other functional areas, Current issues in OM, Operations' Competitive Priorities and Dimensions, Order Winners and Qualifiers, Operations Strategies, Mission, vision, and strategy, Quality, Productivity, Types of productivity, Factors affecting productivity, Numerical Exercises

Unit II: **12 Hours**

Production Policy and Process Management

Production policies and decisions, Process management, Process strategy, Process

selection, Environmental considerations, Corporate Social Responsibility, Make or buy decisions, Breakeven analysis, Numerical Exercises, Capacity concepts and measures, Capacity building strategies, Capacity lead and capacity lag strategies

Unit III : 10 Hours

Forecasting and Demand Management

Dependent Demand, Independent Demand, Types of Forecasting, Components of Demand, Time Series Analysis, Causal Relationship Forecasting, Forecast Error, Qualitative Techniques in Forecasting, Numerical Exercises

Unit IV 10 Hours

Location Strategies

Issues in Facility Location, Free Trade Zone, Industrial Clusters and Special Economic Zones, Plant Location Methods, Factor-Rating Systems, Breakeven analysis, Centroid Method, Numerical Exercises

Facility Layout Design and Analysis

Basic Production Layout Formats, Process Layout, Product Layout, Group Technology (Cellular) Layout, Fixed-Position Layout, Retail Layout, Work cells, Computerized Layout Techniques, Numerical Exercises

Unit V: 12 Hours

Aggregate Planning

Long-Range Planning, Intermediate-Range Planning, Short-Range Planning, Numerical Exercise, Inventory Management

Inventory, Purposes of Inventory, Inventory Costs, Inventory types, Inventory Systems, Single Period Model, Fixed-Order Quantity Models (Q Models), Fixed-Time Period Models (P Models), Establishing Safety Stock Levels, ABC Inventory Planning.

Reference Books

1. Chary, S. N. Production and Operations Management, Tata McGraw Hill, 2017
2. Lee J, Krajewski, Larry P Ritzman, Manoj Malhotra, and Samir Srivastava. Operations Management: Processes and Supply Chains, 11th Edition. - New Delhi: Pearson Education, 2015.
3. Mahadevan, B. Operations Management, Pearson Education India; Third edition (2015).
4. Pannerselvam, R. Production and Operations Management, PHI Learning Pvt. Ltd. 2016.
5. Richard B. Chase and Robert F. Jacobs. Operations and Supply Chain Management, 12th Edition, Mcgraw-Hill Education, 2017.

6. William J. Stevenson, Operations Management. 13th Edition, McGraw-Hill Education, 2017

Course Outcomes:

1. Familiarize students turning raw materials into deliverable product or service those include both man and material
2. Apply different quantitative tools and techniques for decision making in operations management.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	3	2	3	2	3	3	3	2
CO2	2	3	2	3	3	2	2	2	2	2	3	3
W.A	2/5	2.5	2	3	3	2	2.5	2	2.5	1.5	3	1.5

LEGALASPECTSOFBUSINESS

Nature	**Area**	**Semester**	
Foundation	**Core**	**II**	
Course Code	**Course Name**	**Credit/Distributions**	
22C206	**Legal Aspects of Business**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course Objectives

1. To gain an understanding of the legal environment.
2. To comprehend about various laws pertaining to companies from incorporation to winding up.
3. To get acquainted with the laws pertaining to consumer protection, FEMA, SEBI, IDRA.

Unit I: Company Law 15 Hours

Indian Companies Act 1956 - Definition, Essential characteristics of a Company, Kinds of Companies, Incorporation and Registration of a Company, Memorandum of Association, Articles of Association, Prospectus, Meetings, Director, Oppression and Mismanagement, Remedies against oppression and mismanagement, Powers of investigation by the Government.

Unit II: IDRA 10 Hours

Industries Development and Regulation Act (IDRA) - Objectives, Definition of important

terms, Scope and applicability, Exemption, Provisions of IDRA.

Competition Act - Drawbacks of MRTP, Objectives, Scope and applicability, Exemptions, Provisions od Competition Act, Competition commission of India (Composition, term of office, duties and responsibilities, resignation removal and suspension, Inquiry into anti-competitive agreements and abuse of dominant position)

Foreign exchange management act (FEMA) - objectives, scope and applicability, Definition of important terms, regulation and management of Foreign exchange.

Unit III: IPR and Related aspect 10 Hours

Intellectual property rights - Need to protect IPR and kinds of IPR

Patents - Conditions to be patentable, types of patents, essential documents to be submitted, criteria for naming inventors for patent

Trademarks - steps for Trademark registration, Trademark infringement, Types of Trademark Infringement, penalties for trademark infringement

Copyrights - Concept and work protected by copyright

Geographical appellation

Unit IV: Stock Market Operation and Regulation 07 Hours

Security Market Laws, Security and Exchange Board of India Act (SEBI), Laws pertaining to stock exchanges

Unit V: Consumer Protection Act 06 Hours

Consumer Protection Act - Definition of important terms, Basic rights of a consumer, Consumer responsibilities, Redressal machinery under the Act - Central consumer protection council, State consumer protection council, District Forum.

Reference Books

1. S.N. Maheshwari and S.K. Maheshwari. (2016).*A Manual of Business Law.* (6thed.). Himalaya Publishing House
2. K.R. Bulchandani.(2010). *Business Law for Management*. (4th Revised and enlarged ed.). Himalaya Publishing House
3. Francis Cherunilam. (2017).*Business Environment Texts and Cases.* (25th Revised ed.). Himalaya Publishing House

4. S.S. Gulshan and G.K. Kapoor. (2018).*Business and Corporate Laws*. (19th ed.). New Age International Pvt. Ltd.

5. Bare Acts of respective legislations.

Course Outcomes

After the completion of the course, students will be able to:

1. Analyze various laws pertaining to business organizations.
2. Distinguish between various foreign exchange transactions required by business organizations.
3. Recognize and identify the rights and responsibilities of consumers.
4. Explain the rights of the creator through IPR.
5. Review the provisions for different kinds of companies.

CO / PO ARTICULATION MATRIX

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	1	1	3	3	-	1	2	1
CO2	2	3	3	3	1	3	1	2	2	1	3	2
CO3	3	3	2	2	2	1	2	3	3	-	1	2
CO4	3	3	2	1	3	3	1	2	2	-	2	2
CO5	3	3	2	3	3	2	2	3	3	3	3	3
W.A	**2.8**	**3**	**2.4**	**2.4**	**2**	**2**	**1.8**	**2.6**	**2.5**	**1**	**2.2**	**2**

Nature	**Area**	**Semester**	
Foundation	General Management	**II**	
Course Code	**Course Name**	**Credit/Distributions**	
22C208	**Operations Research**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course Objectives

1. Identify and develop operational research models from the verbal description of the real system.
2. Understand the mathematical tools that are needed to solve optimisation problems.
3. Ability to understand and analyze managerial problems in industry so that they are able to use resources (capitals, materials, staffing, and machines) more effectively.

Unit 1: Linear Programming **10 Hours**

Formulation, Graphical solutions – Simplex method – Big-M method , Duality and

Sensitivity analysis.

Unit 2: Transportation and Assignment Problem **15 Hours**

Traveling salesmen problems, solving the sequencing problems.

Unit 3: Queuing Models **10 Hours**

Deterministic and probabilistic models, single server and multiple server models – Infinite population.

Unit 4: Network Analysis **10 Hours**

PERT & CPM, Determination of floats, Time-cost-Trade-off and Crashing of networks. Theory of games – Two persons – Zero-sum game.

Unit 5: Decision Theory **11 Hours**

Decision making under risk and uncertainty, decision trees.

Text Books:

1. Quantitative Techniques in Management – N.D. Vohra
2. Operations Research – Wagner
3. Operations Research – Hamdy Taha
4. Theory and Problems of Operations Research – Richard Brouer
5. Mathematical Methods in Business – Barnett and Sieger
6. Operations Research – S.D. Sharma

After the completion of the course, Students will be able to:

CO1: Solve linear programming problems using appropriate techniques and optimization solvers, interpret the results obtained.

CO2: Determine optimal strategy for Minimization of Cost of shipping of products from source to Destination/ Maximization of profits of shipping products using various methods, finding initial basic feasible and optimal solution of the Transportation problems.

Optimize the allocation of resources to Demand points in the best possible way using various techniques and minimize the cost or time of completion of number of jobs by number of persons

CO3: Determine the optimal strategy of queuing model is to find out the optimum service rate and the number of servers so that the average cost of being in queuing system and the cost of service are minimized.

CO4: Formulate Network models for service and manufacturing systems, and apply operations research techniques and algorithms to solve these Network problems.

Model the competitive real-world phenomena using concepts from game theory. Analyze pure and

mixed strategy games

CO5: Facility with mathematical and computational modeling of real decision-making problems, including the use of modeling tools and computational tools, as well as analytic skills to evaluate the problems.

CO	PO											
	1	2	3	4	5	6	7	8	9	10	11	12
1	-	3	3	3	3	-	1	-	-	-	-	-
2	-	3	3	3	3	-	1	-	-	-	-	-
3	-	3	3	3	3	-	1	-	-	-	-	-
4	-	3	3	3	3	-	1	-	-	-	-	-
5	-	3	3	3	3	-	1	-	-	-	-	-
Weighted Average	-	3.0	3.0	3.0	3.0	-	1	-	-	-	-	-

MANAGEMENT INFORMATION SYSTEMS

Nature	**Area**	**Semester**	
Foundation	General Management	**II**	
Course Code	**Course Name**	**Credit/Distributions**	
22C209	**Management Information Systems**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course Objectives

1. To develop an understanding of the concepts of Information Systems
2. To understand the concepts of Telecommunication Networks
3. To understand the different stages of Software Development Life Cycle
4. To provide students with practical knowledge to work with different functionalmodules of ERP

Unit 1: Information Systems **10 Hours**

Data vs Information, Strategic role of information in management, Organization as an information system. TPS, MIS, DSS, ESS, OAS, Networking concepts, telecommunications networks.

Unit 2: Systems Development **10 Hours**

The concept of systems development life cycle (SDLC), type of SDLC, use of flow charts.

Unit 3: Application Technologies **15 Hours**

ERP concepts, Evolution of ERP, ERP packages, SAP, Baan, MFG-PRO, Oracle, ERP Evaluation, ERP & BPR, ERP Implementation, Extended ERP, Case studies.

Unit 4: Web Publishing **10 Hours**

Web publishing, Types of websites, web surfing, E-commerce, B2B, B2C, C2C, E-commerce security issues, Ethical issues.

Unit 5 : Practicals on ERP **11 Hours**

Functional modules in business.

Text Books:

1. Kennett G. Lauden and Jane P. Lauden MIS, Pearsons Education, 10th Ed, 2007
2. James A. O'Brien, MIS, Tata Mc Grawhill, 7th Ed, 2006
3. C.S.V.Murthy MIS, Himalaya Publishing House, First Ed, 2008
4. D.P. Goyal MIS, Macmillen publishers, 2nd Ed, 2006
5. V.K. Garg ERP Concepts, PHI, 2nd Ed,2003

Course Outcomes:

CO1: Ability to make informed decision using information system.
CO2: Develop knowledge about system development and usage of web portals.
CO3: Develop technical skills in using functional modules in business.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	3	2	-	-	-	3	2	-	-
CO2	-	-	-	2	-	-	-	-	-	-	-	-
CO3	1	-	2	-	2	-	-	-	2	-	-	-
Weighted Average	2	2	2.5	2.5	2	-	-	-	2.5	2	-	-

SKILL DEVELOPMENT – 2

<table>
<tr><th>Nature</th><th>Area</th><th colspan="2">Semester</th></tr>
<tr><td>Foundation</td><td>General Management</td><td colspan="2">II</td></tr>
<tr><td>Course Code</td><td>Course Name</td><td colspan="2">Credit/Distributions</td></tr>
<tr><td rowspan="3">22C207</td><td rowspan="3">Skill Development-2</td><td colspan="2">(L-0:T-0:P-1)Credit=01</td></tr>
<tr><td>C1+C2</td><td>5+ 5 Marks</td></tr>
<tr><td>C3</td><td>40Marks</td></tr>
</table>

Course Objectives

a. The present course is designed to provide an effective communication required for a successful manager

b. To encourage the students to ideate entrepreneurial thoughts

Unit I: 03 Hours

Advance Goal Setting, Effective Communication Skills (Empathetic Communication), Power of Positive Thinking, Emotional Intelligence

Unit II: 03 Hours

Problem Solving techniques, Power of Preparedness, Entrepreneur- ship (How to ideate and start a business and Stress Management tools.

Unit III: 04 Hours

Team work, Team building exercise, Leadership Skills, Self - confidence

Unit IV: 03 Hours

Listening skill exercises, Creativity, Body Language

Unit V: **03 Hours**

Training on relevant Courses before Graduation, Grooming, Cleanliness, Decorum, Table Manners

Course Outcome

1. Ability of students to develop effective communication skill required for a successful manager
2. Evaluate the entrepreneurial thoughts

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	3	2	2	2	3	2	3	2
CO2	2	3	2	3	3	2	2	2	3	2	3	3
Weighted Average	2.5	2.5	2	3	3	2	2	2	3	2	3	2.5

STRATEGIC MANAGEMENT

Nature	Area	Semester	
Core	**General Management**	**III**	
Course Code	**Course Name**	**Credit/Distributions**	
22C301	**Strategic Management**	**(L-3:T-0:P-1) Credit = 04**	
		C1+C2	**30 Marks**
		C3	**70 Marks**

Course Objectives

1. To be able to comprehend vision, mission and goals of the company
2. To be able to analyze and deal with the competition using strategic management tools

Unit I: Introduction **08 Hours**

Origin of strategy, strategy vs tactics, vision, mission and objectives, elements of business strategies, Strategic Management process

Unit II: Competitive Analysis **10 Hours**

Strategically relevant components of internal and external environment, Industry and competitive analysis, analysis of resources and competitive capabilities, environmental scanning techniques

Unit III: Strategy Models **12 Hours**

Strategy Models - BCG matrix, GE nine cell planning grid, Chandlers thesis, levels of strategy making, Mackinsey 7 s model, Porters five forces model, Value Chain Analysis, Strategic intent and the concept of strategic pyramid, corporate ethics and corporate social responsibility(CSR).

Unit IV: Generic competitive strategies **12 Hours**

Generic competitive strategies – stability, expansion, retrenchment, conglomerate and their variants.Strategic and competitive advantage.

Unit V: Strategy Implementation **14 Hours**

Balanced Scorecard, Benchmarking, building core competencies and competitive capabilities, developing policies and procedures for implementation. Designing and installing supporting and rewarding systems. Evaluating and monitoring implementation.

Practical Components:

1. Do an Internet search of 3 companies, analyze and write down the strategy and execution efficiency.
2. Make a study on an unprofitable company and find out the rea- sons for failures in the market and their strategies.
3. Conduct SWOT analysis of a company and submit the report

Recommended Books:

1. Strategy and Structure – Alfred C.Chandler
2. Strategic Management – Alex Miller and Irwin
3. Competitive Advantages: Creating and Sustaining, Superior Performance – Michael E. Porter
4. Competing for the future – Prahlad and Hammel
5. The Future of Competition – Prahlad and Venkataraman
6. Crafting and executing Strategy – Aurthor A. Thompson and others
7. The Art of Strategy – AvinashK.Dixit and Barry J.Nalebuff

Course Outcome

1. Enable the students to develop and deliver effective strategies on a given for an business firm
2. Develop effective planning and communication channels

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	1	3	3	2	3	2	3	2	3	2
CO2	3	3	1	2	2	1	2	1	2	2	3	3
Weighted Average	2.5	3.0	1.0	2.5	2.5	1.5	2.5	1.5	2.5	2.0	3.0	2.5

ENTREPRENEURSHIP& QUALITY MANAGEMENT

Nature	Area	Semester	
Foundation	GeneralManagement	III	
CourseCode	CourseName	Credit/Distributions	
22C302	Entrepreneurship& Quality Management	(L-2:T-0:P-1) Credit =03	
		C1+C2	30 marks
		C3	70 marks

COURSE OBJECTIVES

1. To understand the concept of entrepreneurship
2. To familiarize with business Plan
3. To appreciate scope for rural & social entrepreneurship
4. To be acquainted with entrepreneurial flow analysis

Unit–1 **(10 Hours)**

Foundations of Entrepreneurship:

Concept and nature of entrepreneurship, social & cultural factors in nurturing entrepreneurship. Lateral thinking. Role of entrepreneurship in economic development. Characteristics of entrepreneurship. Type of Start-ups .Institutional support for promoting study of incubation.

Unit–II **(12 Horus)**

Business Planning:

Entrepreneurial process. Logistics strategy. Entrepreneurship Idea- generation and preparation of business plans. Exercises in preparation of business plans. Environmental scanning. Angel Investor: Features

Venture Capital.

Unit–III **(12Hours)**

Rural & Social Entrepreneurship:

Potential for entrepreneurship in rural India, SHGs, micro credit etc., Case studies of rural &social entrepreneurship in India. SDM case study of women entrepreneurship. MSMEs.

Unit – IV Critical Issues in Entrepreneurship: (12 Horus)

Issues associated with effective entrepreneurship in India. Concept of involvement and communication. Qualitative process. Corporate ethics, culture and image. Managerial issues. Customer insight-driven relationship Legal issues**.**

(10 Hours)

Unit – V Entrepreneurial Perspectives:

Entrepreneurial opportunity for budding entrepreneurs. Entrepreneurial motivation. Enterprise marketing, Enterprise Growth Strategies. Creativity and Innovation. **Competencies. Resourceful collaboration.** Business Resource Mobilization including state and central Government . Incipient sickness and preventive measures

Recommended Text Books:

1. The Dynamics of Entreprenural Development and Mangement -Vasant Desai
2. Management and Entrepreneurship –K.Venkatramana
3. Entrepreneurial Development –Dr S. S.Khanka
4. Entrepreneurship- Madhurima Lall snd Shikha Sahai

Practical Components (Revised):

1 Select a idea of your own and conduct a brainstorming session

2 .Meet an entrepreneur and summarize his entrepreneurial journey

Course Outcome

1. Enable the students to develop different methods that can be used to minimize uncertainties at different stages of the entrepreneurial process in a highly uncertain environment
2. Analyze requirements and develop quality improvement programs and manage quality improvement teams

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	3	3	2	3	2	3	3	3	2
CO2	3	1	2	3	2	1	2	1	2	2	3	3
Weighted Average	3.0	2.0	1.5	3.0	2.5	1.5	2.5	1.5	2.5	2.5	3.0	2.5

Electives : Group-I

CONSUMER BEHAVIOR

Nature	Area	Semester	
Elective - I	**Marketing**	**III**	
Course Code	**Course Name**	**Credit / Distributions**	
22C3M1	**Consumer Behavior**	**(L-2:T-0:P-1) Credit = 03**	
		C1+C 2	**30 marks**
		C3	**70 marks**

Course objectives

1. To get acquainted with various Motivational Factors
2. To Identifying the factors influencing Consumer Behaviour
3. To appreciate the concept of Customer Satisfaction as the key factor

Unit I: Introduction **12 Hours**

Differences between Motives Motivating and Motivation, Dynamic characteristics of Motivation, Personality, Values of Perception, Attitudes, Basis of Segmentation, Life Style influences.

UnitII: Models of Consumer Behavior **12 Hours**

Introduction, Factors influencing Consumer Behaviour, Personality, Psychographics, Family, Society, Different models of Consumer Behaviour – Economic, Learning, Psychoanalytical, Sociological, Howard Shett, Nicosia, Webster and Wind, Engel, Blackwell and Minard models.

Unit III: Consumer Decision Making **12 Hours**

Consumer Decision Making, buying roles, Stages of the Decision Process – High and low effort decisions, Post purchase decisions, Consumer Adaptation Process.

Unit IV: Consumer Satisfaction **10 Hours**

Consumer Satisfaction; Satisfaction versus Service, Quality Level and Customer Loyalty, Handling Customer dissatisfaction and complaints, Customerisation, Implications of shaping expectations.

Unit V: Consumer Behavior Trends **12 Hours**

The future of consumer behavior in India, Issues and Challenges of Social Class, Challenges in cross-cultural influences, Reasons behind rise of consumerism, Consumer protection act in India.

Practical Components:

1. Students shall visit malls and unorganized retail outlets and observe the behaviour of customers of different outlets while buying different category of goods and present the findings / observations followed with a group discussion.
2. Students need to prepare a questionnaire and do a survey on consumer buying behaviour and present the findings in the class.
3. Students are encouraged to discover the need for motives in three to four advertisements
4. Conduct a survey using Interview Method to find out the important factors in their purchase of Watches, Laptops, Backpacks etc.

Recommended Books:

1. Marketing Research – R.Nargundkar
2. Consumer Behaviour – Schiffman and Kanuk
3. Marketing Research – Tull, Green and Hawkins
4. Business Research Methods – Zikmund
5. Marketing Research – N.K. Malhotra
6. Marketing Research – Parashuraman, Grewal
7. Consumer Behaviour – Hoyer Mac Innis
8. Consumer Behaviour in Indian Perspective – Suja R. Nair

Course Outcome

1. Distinguish between different consumer behaviour influences and their relationships
2. Establish the relevance of consumer behaviour theories and concepts to marketing decisions
3. Implement appropriate combinations of theories and concepts.

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	3	3	2	2	2	3	2	3	2
CO2	3	3	2	3	3	2	2	2	2	2	3	3
Weighted Average	1.67	1.67	1.00	2.00	2.00	1.33	1.33	1.33	1.67	1.33	2.00	1.67

SALES AND LOGISTICS MANAGEMENT

Nature	Area	Semester	
Elective - II	**Marketing**	**III**	
Course Code	**Course Name**	**Credit / Distributions**	
22C3M2	**Sales & Logistics Management**	**(L-2:T-0:P-1) Credit = 03**	
		C1+C 2	**30 marks**
		C3	**70 marks**

Course objectives

1. Analyze the various dimensions of Selling Concepts
2. To appreciate the sales process through emerging electronic channels
3. To Outline the logistics involved for an effective sales management

Unit I: Sales Management **12 Hours**

Objectives of Sales Management, Personal Selling, Salesmanship, Personal Selling Process, Types of Sales Organizations – Determining the kind of Sales Force and Size of the Sales Force.Qualities of Sales Professionals.

Unit II: Managing the Sales force **12 Hours**

Effective Recruiting of the Sales Force, Selecting and Training the Sales Force, Elements of Time and Territory Management, Sales Territories and Sales Quotas – Compensating the Sales Force, Motivating the Sales Force – Controlling & Evaluating the Sales Force.

Unit III: Trends in Retailing and Wholesaling **10 Hours**

E-commerce: E-tailing, Marketing on the net, Non-store retailing, Emerging trends of Retailing &Wholesaling in India.

Unit IV: Distribution and Logistics Management **12 Hours**

Objectives of Logistics Management: Modes of Transportation, De- sign of Distribution Channel, Strategies of Distribution Channel, Com-ponents of Logistics – Inbound and

Outbound Logistics, Third party Logistics, Freight Forwarders, Communication Order Processing, Packaging, Warehousing.

Unit V: Logistics Strategies **10 Hours**

Elements of Supply Chain Management, Logistics Information Sys- tem, Computer packages used in Logistics, Sales and Logistics for rural markets,

Practical Components:

1. To Study the Important features of Apps which appeal most related to customers of Food suppliers by conducting an survey using Interview method
2. Conduct a survey in rural areas and study the implications associated with imitation (me too) products.
3. To analyze the designs of packaging and list out the advantages and disadvantages associated with it.

Reference Books:

1. Sales Management – Decisions, Strategies and Cases – Richard R. Still, Edward W. Cundiff and Noman A.P. Govani
2. Professional Sales Management – R.E. Anderson, Joseph F. Har, Alan J. Bash
3. Marketing Channels – Louis W. Stern, Adel I. ER – Ansary, T. Coughlan
4. Fundamentals of Logistics Management – M. Lambert, James R. Stock, M. Eliram
5. Logistics Management – Donald J.B. and D.J. Closs
6. Logistics and Supply Chain Management – Martin Christopher
7. Sales Management – Analysis and Decisions Making – Thomas N. Ingram
8. Managing Supply Chain – J.L. Gattorn and D.W. Waldis

Enable students to evaluate the opportunities for improvement

Equip students to provide better customer service.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	3	3	2	3	2	3	2	3	2
CO2	2	3	2	2	3	2	2	2	2	2	3	3
W.A	2.5	2/5	2.5	2.5	2	2	2.5	2	2.5	2	3	2.5

ADVERTISING AND SALES PROMOTION MANAGEMENT

Nature	Area	Semester	
Elective - III	**Marketing**	**III**	
Course Code	**Course Name**	**Credit / Distributions**	
22C3M3	**Advertising & Sales Promotion Management**	**(L-2:T-0:P-1) Credit = 03**	
		C1+C 2	**30 marks**
		C3	**70 marks**

1. Discuss the increasing importance of promotion and how it differs from advertising

2. What functions do advertising objectives serve

3. Recognize various methods of evaluating adverting effectiveness

Unit I: Promotion Mix **12 Hours**

Elements in Promotion Mix, Types of Advertising, Impact of Publicity on society, Personal Selling Strategies, Public Relations and Sales Pro- motion.

Unit II: Advertising **10 Hours**

Advertise ability and Advertising aids, Advertising Planning and Decision Making, Media Frequency Plan.

Unit III: Advertising Campaign Planning **14 Hours**

Advertising Effectiveness, Assessment and Criticism of DAGMAR Approach, Creative approaches for making a effective Advertising, Copywriting, pre-testing and post-testing, Designing a Advertising Copy, Marketing Communications, Different types of Advertising appeals and themes, Drafting an advertisement copy.

Unit IV: Advertising Media **10 Hours**

Types of media, Conventional media, Traditional media and media planning and Scheduling, Advertisement Budgets, Advertising Strategies for rural markets.

UnitV: Advertising Agencies **10 Hours**

Ethics in Advertisement, Advertising Agencies in India and abroad, Rural Advertising, Social Advertising, Ethics followed in advertising, Characteristics of Advertising Standards Council of India (ASCI).

Practical Components:

1. Analyze the advantages and limitations of sales promotion of 5 FMCG MNC's in India
2. Outline the methods and tools of sales promotion by visiting the malls
3. Analyze the room for the improvement of technological innovation in advertisement in a major textile company

Recommended Books:

1. Advertisement and Promotion – Belch and Belch
2. Advertising – Aaker and Bathra
3. Advertising Management – Chunawalla
4. Advertising Management – Write and Ziegler
5. Contemporary Advertising – Williams Arens
6. Advertising Management – Rajeev Batra, John G.Myer, David Aker
7. Advertising Planning & Implementation – Sangeeta Sharma &Raghuvir Singh
8. Advertising Principles and Practice – Wells, Moriatry, Burnett
9. Advertising Management – JaishriJethwanry, Shruthi Jain

Course Outcome

1. Distinguish different situations in the competitive environment will affect choices in target marketing
2. communicate marketing information persuasively and accurately in oral, written and graphic formats
3. contribute to evaluating the effectiveness of advertising and marketing communications initiatives

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	3	2	3	2	3	3	3	2
CO2	2	3	2	3	3	2	2	2	2	2	3	3
Weighted Average	1.67	1.67	1.33	2.00	2.00	1.33	1.67	1.33	1.67	1.67	2.00	1.67

Electives: Group-II STRATEGIC

FINANCIAL MANAGEMENT

Nature	Area	Semester	
Elective - I	**FINANCE**	**III**	
Course Code	**Course Name**	**Credit / Distributions**	
22C3F1	**STRATEGIC FINANCIAL MANAGEMENT**	**(L-2:T-0:P-1) Credit = 03**	
		C1+C 2	**30 marks**
		C3	**70 marks**

Course Objectives:

1. To analyze the financial implications or aspects of various business strategies and the strategic management of finance

2. To understand conceptual framework i.e., the act of putting together financial assumptions, ideas and perceptions into astrategic design

Unit I: Conceptual framework of Strategic

Financial Management **10 Hours**

Strategic Financial Decision making framework, function of Strategic Financial Management; Strategy at different hierarchy level; Financial Planning-Process-Types of Financial Plan – Financial Model-Types of Financial Model- process of Financial Model Development (Theory only)

Unit II: Capital Structure Decisions **12 Hours**

Capital structure & market value of a firm. Theories of capital structure - NI approach, NOI approach, Modigliani Miller approach, Traditional approach. Planning the capital structure: EBIT and EPS analysis, ROI & ROE analysis (Theory and Problems)

Unit III: Investment Decisions under Risk and Uncertainty **14 Hours**

Investments Decisions under Risk and Uncertainty–Techniques of Investment Decision–Risk Adjusted Discount Rate, Certainty Equivalent Factor, Statistical Method

(Probability distribution Approach, Normal Distribution Approach) Sensitivity Analysis and Simulation Method, Decision tree. (Problems)

Unit IV: Leasing **12 Hours**

Leasing–Importance, Types, Tax Considerations, and Accounting Considerations–Evaluation of Lease from the point of view of Lessor and Lessee–Lease versus Buy Decision–Venture Capital–Concept and Developments in India–Process and Methods of Financing–Fiscal Incentives

Unit V: Financial Re-Engineering **08 Hours**

Meaning of Financial Re-Engineering- interpretations of Various Stakeholder's approach to innovative Financial Engineering, Funding Structure-Fund rising Instruments; Programs and Policies to reward various Shareholders

Practical Components:

Students should be able to distinguish below activities

1. How can you distinguish between strategies and policies?
2. Are strategies and policies as important in a non business enterprise (such as a labor union, the State Department, a hospital, or a city fire department) as they are in a business? Why and how?
3. Why are contingency strategies important?
4. Choose an organization you know and identify its strengths and weaknesses. What are its special opportunities and threats in the external environment?
5. How would you make an organizational appraisal of your college or university? What kind of business is the school in?
6. How can strategies be implemented effectively?

Recommended Books:

1. Girish P JakhotiyaVikas Publishing, (2011) 2/e Strategic Financial Management
2. RajniSofat&PreetiHiro,(2011) Strategic Financial Management, Phi, Delhi
3. Chandra, Prasanna,(2007) FINANCIAL MANAGEMENT, Tata McGraw Hill,

Delhi.

Weaver &Weston,(2001) STRATEGIC CORPORATE FINANCE, Cengage Learning, Delhi

COURSE OUTCOME:

After completing the course student should be able to

CO1 Formulate financial planning and develop insight into financial model.

CO2 Design and Plan the capital structure

CO3 Apply different techniques of risk analysis

CO4 Critically analyse leasing decisions

CO5 Think creatively to resolve financial problems in business

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	3	3	2	3	2	3	2	3	2
CO2	2	3	1	2	3	1	2	1	2	1	3	3
CO3	3	3	3	3	3	1	2	1	1	1	3	3
CO4	3	3	3	3	3	1	2	1	1	1	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	2.8	2.8	2.2	2.8	3	1.6	2.4	1.6	2	1.6	3	2.8

FINANCIAL MARKET AND SERVICE

Nature	Area	Semester	
Elective - II	**FINANCE**	**III**	
Course Code	**Course Name**	**Credit / Distributions**	
22C3F2	**FINANCIAL MARKET AND SERVICE**	**(L-2:T-0:P-1) Credit = 03**	
		C1+C 2	**30 marks**
		C3	**70 marks**

Course objective

1. To provide the students, basic knowledge about the Finance concepts, markets and various services provided in those markets.
2. To provide adequate information about the roles of intermediaries and its regulating bodies.
3. To provide information about the prevailing financial system in India.

Unit I: Overview of Indian Financial System **12 Hours**

Indian Capital Market and Money Market, Foreign Institutional Investors (FIIs)-Portfolio Management Schemes of Indian Institutional Investors, Global Capital Flows - Hedge Funds, Private Equity. ADR and GDR.

Unit II: Indian Capital Market **10 Hours**

Primary and Secondary Capital Markets in India-Market for Stocks and Bonds, Market for Derivative Instruments (Financial and Commodities), Over the Counter Markets (OCTEI), NCDEX, MCX. Markets for Government Securities, Mock Exercises in Online Stock Market Operations on Sensex and Nifty.

Unit III: Banking in India **10 Hours**

Meaning of Bank, types of banks, Current problems of public sector banks, capital adequacy norms, Basel norms, NPA problem, corporate debt restructuring, and securitization of debt and asset reconstruction companies, the new Insolvency and bankruptcy code

Unit IV: Merchant Banking and Credit Rating **12 Hours**

Introduction to merchant banking, merchant bankers/lead managers, registration,

obligation and responsibilities, underwriters, bankers to an issue, brokers to an issue. Issue management activities and procedure pricing of issue, issue of debt instruments, book building green shoe option, services of merchant banks, Credit Rating - SEBI guidelines, limitations of rating.

Unit V: Regulatory Mechanisms **12 Hours**

Therole of SEBI in regulating the Capital Market and Stock Exchanges- Outlines of the SEBI Act and Powers of SEBI- Important Cases dealt with by SEBI-Sahara, NSEL, Insider Trading Cases etc. Investigation into Corporate Frauds under Companies Act 2013, NFRA and IBBI

Practical component:

1. Prepare a report on capital market scams. And visit stock broking firms.
2. Visit any 5 retailers and collect the information about cashless transaction (merchant banking)

Text Book:

1. M.Y. Khan,(2008) INDIAN FINANCIAL SYSTEM, Tata McGraw Hill, Delhi
2. Jeff Madura,(2008) FINANCIAL MARKETS AND INSTITUTIONS, CenGage Learning, Delhi
3. H.R. Machiraju,(2009) INDIAN FINANCIAL SYSTEM, Vikas Publishing House, Delhi
4. Pathak,(2007) THE INDIAN FINANCIAL SYSTEM, Pearson Education India

Reference Books:

1. Vasanth Desai, Financial Markets & Financial Services, HPH, Mumbai
2. PunithavathyPandian, Financial Markets and Services, Vikas Publishing House, New Delhi
3. Gorden E &Natarajan, Financial Services, HPH, Mumbai

COURSE OUTCOME: After completing the course student should be able to

CO1 Evaluate various financial products in the primary and secondary markets

CO2 Analyse functioning of Stock Exchange

CO3 Analyse the banking and non-banking operations

CO4Examine the Regulatory bodies

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	1	1	1	1	1	2	1
CO2	3	1	1	1	1	1	1	1	1	1	1	2
CO3	2	1	1	1	2	1	3	2	1	1	1	1
CO4	1	2	2	1	1	2	2	2	1	2	3	2
Weighted Average	2.25	1.25	1.25	1	1.25	1.25	1.75	1.5	1	1.25	1.75	1.5

INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT

Nature	Area	Semester	
Elective - III	**FINANCE**	**III**	
Course Code	**Course Name**	**Credit / Distributions**	
22C3F3	**INVESTMENT ANALYSIS & PORTFOLIO MANAGEMENT**	**(L-2:T-0:P-1) Credit = 03**	
		C1+C 2	**30 marks**
		C3	**70 marks**

Course Objectives

- To have a thorough understanding on investment and avenues of investment
- Tohaveexposureonanalyse the various risk & return of different portfolios.
- Tohave an exposure to valuation of different kinds of securities.
- To have a broad knowledge about fundamental and technical analysis by using various theories.

Unit I: Investment Background **08 Hours**

Concepts of Investment- Investment Avenues - Objectives of Investment- Investment, Speculation and Gambling - Trading and investing - Portfolio Management process - Sources of Investment Information - Investing Internationally - The asset allocation decision -Organization and functioning of securities market

Unit II: Analysis of Risk & Return **14 Hours**

Return - Measuring Return- Risk - Measuring Risk - S.D and Variance- Return and Risk of a Single Security and Portfolio - Calculation of Risk using Variance Covariance Matrix - Reduction of Risk through Diversification - Concept and Types of Risks - Total Risk, Systematic and Unsystematic Risk - Other Risks - Beta and its Computation - Uses and Limitations of Beta.

Unit III: Valuation of Securities **12 Hours**

Bond- Bond features, Types of Bonds, Determinants of interest rates, Bond Management Strategies, Bond Valuation, Bond Duration. Preference Shares- Concept, Features, Equityshares- Concept, Valuation, Dividend Valuation models. (Theory & Problems).

Unit IV: Fundamental Analysis and Technical Analysis **08 Hours**

Economy - Industry-Company Framework- Economic Analysis and Fore- casting – Technical Analysis-Assumptions of Technical Analysis - Technical Indicators - Dow Theory - Important Tools of Technical Analysis -Limitations of Technical Analysis - behavior of stock prices- Market Efficiency - Forms of Market Efficiency- Behavioral Finance - Standard Finance Versus Behavioral Finance

Unit V: Active Portfolio Management **14 Hours**

Markowitz (MPT) ,Sharpe, Treynor, Jensen's Alpha measures of mutual fund performance – measuring investment return, conventional theory of performance evaluation, Performance attribution procedures, style analysis and morning star's, risk adjusted rating. Active portfolio construction using Treynor – Black model, Sharpe Optimal Portfolio Construction

Practical Components:

1. Students should study the stock market pages from business press and calculate the risk and return of selected companies.
2. Each student will be given a virtual cash of Rs.5 Lakhs and they will be asked to invest in equity shares based on fundamental analysis throughout the semester. At the end the best investment will be awarded based on the final net worth. Virtual on line trading account can be opened for the student and every week 2 Hours can be allotted to invest, monitor and evaluate.
3. Students should study the stock market pages from business press and calculate the risk and return of selected companies.
4. Students can do a macro economy using GDP growth.
5. Students' are expected to do Industry analysis for specific sectors.
6. Students can do Company analysis for select companies using profitability and liquidity ratios.
7. Practice technical analysis using Japanese candle sticks.

Recommended Books:

1. Prasanna Chandra, 3/e,TMH, (2010). Investment Analysis and Portfolio management
2. ZviBodie, Kane, Marcus &Mohanty, 8/e, TMH, (2010). Investments
3. Security Analysis & Portfolio Management- J Kevin, TMH

Reference Books:

1. Reilly & Brown, Cengage, 10e/ (2017). Analysis of Investments & Management
2. Punithavathy Pandian,2/e, Vikas, (2005). Security Analysis & Portfolio Management

Course Outcomes

- Explored to different avenues of investment and apply the concept of portfolio management for the better investment.
- Determining the portfolio risk, return and measuring them on the basis of various techniques and invest in less risk and more return securities.
- Equipped with the knowledge of security analysis and valuation for right investment.
- Pre and post investment analysis using fundamental and technical analysis for the better investment
- Performance evaluation and style analysis of investment and portfolio revision.

CO / PO ARTICULATION MATRIX

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	1	1	2	1	1	1	2	2
CO2	3	1	3	2	3	1	2	2	1	3	3	2
CO3	3	1	3	2	3	1	2	2	1	3	3	2
CO4	3	2	3	2	2	1	2	2	1	3	3	2
CO5	3	1	3	2	2	1	2	2	1	3	3	2
W.A	**3**	**1.2**	**2.6**	**1.8**	**2.2**	**1**	**2**	**1.8**	**1**	**2.6**	**2.8**	**2**

Electives: Group - III

PERSONAL GROWTH AND INTERPERSONAL EFFECTIVENESS

Nature	Area	Semester	
Elective - I	Human Resource	III	
Course Code	Course Name	Credit / Distributions	
22C3H1	PERSONAL GROWTH AND INTERPERSONAL EFFECTIVENESS	(L-2:T-0:P-1) Credit = 03	
		C1+C 2	30 marks

Course Objectives

1. To develop and nurture a deep understanding of self.
2. To understand and practice personal and professional responsibilities.
3. To Nurture comprehensive skill sets for life knowledge such as learning, personality improvement, and effective interpersonal relation, resolving conflict for better intrapersonal and interpersonal relationship.

Unit I: Personal Growth 10 Hours

Meaning and concepts of personal growth, Self esteem: Know yourself, accept yourself, Self improvement: Plan to improve, actively working to improve yourself. Life positions, Personal life style choices.

Unit II: Individuals and Organizations 12 Hours

Values - Meaning, Types of values – Societal values, Organizational values and work values. Attitudes: Nature and Dimensions of attitude – Components of attitudes, Functions of attitudes, Changing attitudes, and antecedents of work related attitudes. Job satisfaction – Meaning, influences on job satisfaction, outcomes of job satisfaction. Job involvement, Organizational commitment – Meaning, Outcomes of organizational commitment, Guidelines to enhance organizational commitment.

Unit III: Learning and personality theories 12 Hours

Meaning, Learning principles, Learning Theories – Classical condition- ing theory, Operant conditioning, Cognitive theories, Social Learning theory,Learning styles. Personality theories: The Big Five personality Traits, Myers Briggs Type Indicator (MBTI), Carl Jung's theory of personality types.

Unit IV: Interpersonal Behavior and conflicts 10 Hours

Nature of conflict, Levels of conflict, Sources of conflict, Effects of conflict, Intraindividual conflict – Conflict due to frustration, Goal conflict, Role conflict and ambiguity, Interactive conflict – Interpersonal conflict, Inter group behavior and conflict, Assertive behavior, Transactional analysis, Types of Transaction, Life positions.

Unit V: Stress management and

Emotional Intelligence **12 Hours**

The emergence of stress, causes of stress – Extra organizational stressors, Organizational stressors, group stressors and individual stressors. Con- sequences of stress – Physiological symptoms, psychological symptoms and behavioral symptoms. Coping strategies for stress – Individual approaches and organizational approaches. Emotional Intelligence: Role of emotions, Types of emotions, Meaning of Emotional Intelligence, components of emotional Intelligence.

Practical Component

1. Students are expected to conduct an in depth study about various personality traits and TA and submit a detailed report.
2. Ask the individual students to seek multisource feedback about their interpersonal effectiveness from peers, teachers and parents.
3. Conduct mock stress interview for students to enhance their employability skills.

Recommended Books:

1. UdaiPareek. (2018).*Understanding OB*.(4th ed.). Oxford University Press.
2. Keith Davis. (2003). *Organizational Behaviour*. (11th ed.). Tata McGraw Hill

Reference Books

1. Stephen P Robbins . (2016). *Organizational Behavior – concepts, controversies and applications. (16th ed.).* Pearson
2. Fred Luthans. (2010). *Organizational Behavior*.(12th ed.). TMH
3. Wallace & masters. (2010). *Personal development for life and wor*k.(10th ed.).Cengage Learning

CO1. Ability to set short term and long term goals.

CO2. Ability to distinguish between cultures, change attitudes of people and develop knowledge on improving job satisfaction of employees.

CO3. Develop learning skills and skills related to positive reinforcement.

CO4. Ability to identify individual's personality type favorable or unfavorable to work performance.

CO5. Ability to identify sources and causes of conflicts and develop conflict resolution strategies.

CO6. Ability to identify causes of stress and develop stress coping strategies.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	-	-	-	-	1	-	-	2	1	3	-
CO2	3	2	2	-	-	3	2	-	2	-	-	-
CO3	3	1	2	-	3	2	2	-	2	-	-	3
CO4	3	2	3	-	-	-	-	-	2	-	-	-
CO5	3	3	3	-	-	2	2	-	3	-	2	-
CO6	3	3	3	-	-	3	2	2	3	-	-	-
Weighted Average	3	2.2	2.6	-	3	2.2	2	2	2.33	1	2.5	3

ORGANIZATIONAL CHANGE AND DEVELOPMENT

Nature	Area	Semester	
Elective - II	**Human Resource**	**III**	
Course Code	**Course Name**	**Credit / Distributions**	
22C3H2	**ORGANIZATIONAL CHANGE AND DEVELOPMENT**	**(L-2:T-0:P-1) Credit = 03**	
		C1+C 2	**30 marks**
		C3	**70 marks**

Course Objectives:

1. To gain a general understanding of organizational change and development concepts
2. To develop an understanding of change models and theories
3. To reflect on different interventional strategies and their importance in a change process
4. To apply change concepts to a real case example

Unit I: Organizational Change **10 Hours**

Introduction to change, Nature of Change, Types of change, Reasons for change, Reasons for resistance to change, Overcoming resistance to change, Differences between planned and unplanned organizational Change, Change agents, Skills and competencies of change agents.

Unit II: Organization Development **10 Hours**

Introduction and concepts of Organization Development, Characteristics of OD, History of Organization Development: Laboratory Training Stem, Survey Research and Feedback Stem, Action Research Stem, Socio-technical and Socio-clinical Stem. Values, Assumptions and Beliefs in organization development: Early statements of OD values and Assumptions, Implications of OD values and Assumptions.

Unit III: Theory and Management of

Organization Development **12 Hours**

Foundations of organization development: Models and Theories of planned change - Kurt Lewin'sThree stage model, Force Field Analysis, Burke Litwin Model of Organizational Change, Systems Theory. Participation and Empowerment, Teams and Teamwork, Parallel Learning Structure, Normative Re educative strategy of Change. Managing the organization development process: Diagnosis, Six box model, Action Component, Program management component. Action research and organization development: Action Research a Process and an Approach, Genesis of OD in the company. The OD Process – A Diagnostic Study.

Unit IV: Organization Development

Intervention **14 Hours**

Team interventions: Teams and work Groups Strategic Units of Organizations, Broad Team Building Interventions, The Formal Group Diagnostic Meeting, The Formal Group Team Building Meeting, Process Consultation Interventions, A Gestalt Approach to Team Building,

Techniques and exercises used in Team building. Inter-group and third party peacemaking intervention: Inter group team building Interventions, Third party peacemaking Interventions, Organization mirror Interventions, Partnering. Comprehensive intervention: Beckhard's Confrontation meeting, Strategic Management activities, Real time strategic change, Stream Analysis, Survey feedback, Grid OD, Trans-organizational Development. Structural interventions: Socio-technical systems, Self managed teams problems in implementation, MBO and Appraisal, Quality Circles, Quality of work life projects, Physical settings and OD, Total Quality Management, Self design strategy, Large scale systems change and Organizational Transformation. Training experiences: T Groups, Behavioural modeling, Life and career planning, Coaching and mentoring, Instrumented Training.

Unit V: Key Considerations and Issue **10 Hours**

Issues in consultant-Client relationships: Entry and Contracting, defining the client system, The trust issue, The nature of consultant's expertise, Diagnosis and appropriate interventions, Depth of Intervention, The consultant as a model, The consultant team as a microcosm, Dependency issue and terminating the relationship, The role of the Human Resource specialist in OD activities. Power, politics and organization development: Theories about the sources of social power, Organizational politics defined, Frameworks for analyzing power and politics, The role of power and politics in the practice of OD.

Practical Component

1. Students are expected to submit a report on Changes that have taken place in various industries.

2. Individual students are expected to conduct force field analysis and identify the driving and restraining forces for trimester scheme.

Recommended Books:

1. French and Bell. (2006). *Organization Development.* (6th Ed.). Pearson

2. Dr.S.S.Khanka. (2003). *Organizational Behavior*.(4th Ed.).S.Chand& Company Pvt ltd.

Reference Books

1. Cummings T. G, & Worley C.G.(2014). Organization Development and Change(10th Ed.). Cengage Learning

2. Fred Luthans. (2010). *OrganizationBehaviour an Evidence based Approach*.(12th Edition). McGrawhill,

3. Keith Davis. (2002). *HumanBehaviour at Work.* (11th Ed.). Tata McGrawhill

III SEM Organizational Change and Development.

CO1. Develop the knowledge of planning for organizational change and apply appropriate strategy for implementing planned change.
CO2. Ability to identify the sources of resistance to change and overcoming resistance to change.
CO3. Ability to apply theories of change management in work environment.
CO4. Application of appropriate OD intervention for organization change and development.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	2	-	-	-	-	-	2	1	3	2
CO2	3	2	3	2	2	2	2	-	2	-	2	-
CO3	3	2	2	2	2	2	1	-	2	-	2	2
CO4	3	-	3	3	2	3	1	-	2	-	2	-
Weighted Average	3	2.33	2.5	2.33	2	2.33	1.33	-	2	1	2.75	2

TRAINING IN ORGANIZATIONS

Nature	Area	Semester	
Elective - III	**Human Resource**	**III**	
Course Code	**Course Name**	**Credit / Distributions**	
22C3H3	**TRAINING IN ORGANIZATIONS**	**(L-2:T-0:P-1) Credit = 03**	
		C1+C 2	**30 marks**
		C3	**70 marks**

Course Objectives

1. To develop an understanding on Training and Learning environment.
2. To comprehend on how need analysis is done for training.
3. To get acquainted with the trainer's skills and designing a training program.
4. To conceptualize on the evaluation of training program.

Unit I: Introduction **10 Hours**

Introduction to the concept of Training, Importance of training, Advantages of training, Training challenges, Changing workplace and workforce, Training as a sub system of HRD

Learning principles, learning environment, Instructional design, Learning outcomes, Feedback, Conditions of transfer, Converting training objectives to training plan.

Unit II: Training Needs Assessment (TNA) **12 Hours**

Introduction to Needs Assessment, Why conduct Training Need Analysis? When to conduct a Training Need Analysis?, Needs Assessment Process - Organizational support for TNA, Organizational analysis, Requirement Analysis, Task and KSA Analysis, Person Analysis, In- put design and evaluation of Training programs. Needs Assessment Techniques, Advantages and Disadvantages of Needs Assessment Techniques, Training enhancement, Trainee characteristics

– Trainee readiness and Trainee Motivation.

Unit III: Trainer's skills **10 Hours**

Communication Skill, Questioning Skill, Body Language Gesture, Handling difficult situation, Creativity skills, Technical skills, Interpersonal skills, Self Development and awareness, Managerial skills, Designing skills, Humour, Integrity, Credibility, Transparent, resilience, Rapport building, Confidence, Feedback sensitivity.

Unit IV: Training Delivery **12 Hours**

Differences between Traditional and Modern methods, Traditional Training Approaches – Classroom instruction, Lecture and Discussion, Case study, Role play, Self Directed Learning Program (SDLP), Simulated work settings, Modern Training Approaches - Distance Learning Program (DLP), CD ROM and Interactive Multimedia, Web- based instructions, Intelligent Tutoring System (ITS), Virtual Reality Training (VRT).

Unit V: Training Evaluation **12 Hours**

Need for evaluation, Evaluation criteria, Evaluation objectives, Types of evaluation instruments– Questionnaires / survey, Interview, Tests, Focus group, Observation of participant, Performance record, Training Evaluation Models – Kirk Patrick's model, Philip's Model, CIRO model of Training Evaluation.

Practical Component

1. Students are expected to conduct a mock training session including need identification and a set of students to evaluate the effectiveness of the same.
2. Give a training need analysis case and ask the students to find out the training needs.
3. 10 minutes of role play by individual students to exhibit their skills as a trainer.

Recommended Books:

1. Irwin L. Goldstein, J. Kevin Ford. (2005).*Training in Organization.*(4th Ed.). Wordsworth.
2. Dr.B.Janakiraman. (2007).*Training and Development*, (Kindle ed.). Biztantra / Wiley Dreamtech

Reference Books

1. P Nick Blanchard James W Thacker. (2010). *Effective Training: System Strategies & Practices*, (custom ed.) .Pearsons
2. Rolf P Lynton UdaiPareek. (2011). Training ForDevelopment. (3rd ed.). Sage India
3. Gargulo& Others. (2008). *The Trainers portable mentor*. (1st ed.) . Pfeiffer

Course Outcomes

After the completion of the course, students will be able to:

1. Assess the importance of training in organizations.
2. Compute training need analysis for organizations.
3. Compare and contrast and different training methods.
4. Identify the skills required for the trainer.
5. Evaluate the effectiveness of training programs through various models and theories.

CO / PO ARTICULATION MATRIX

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	3	3	2	2	2	2	3	3
CO2	3	3	3	3	2	2	2	3	3	1	3	3
CO3	3	3	3	3	3	2	2	3	3	1	3	2
CO4	2	3	2	2	2	3	3	1	3	2	3	3
CO5	3	3	3	3	2	2	2	3	3	3	1	2
W.A	**2.8**	**3**	**2.8**	**2.6**	**2.4**	**2.4**	**2.2**	**2.4**	**2.8**	**1.8**	**2.6**	**2.6**

Electives:Group-IV

FUNDAMENTALS OF CSR

Nature	**Area**	**Semester**	
Elective-I	**Corporate Social Responsibility**	**III**	
Course Code	**Course Name**	**Credit/Distributions**	
22C3C1	**Fundamentals of CSR**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course Objectives:

- To learn the concepts and theories of CSR
- To know the importance of sustainable development goals
- To understand the role of NGOs in promoting and implementing CSR initiatives in India
- To evaluate futuristic role of CSR in India

Practical Components:

- Visit two MNCs and list down their CSR activities
- Visit two NGOs and enumerate their role in propagating sustainable development goals

- To find out from NGOs their role in promoting CSR activities in India

UNIT I **(12 Hours)**

Introduction to CSR:

Meaning & Definition of CSR, History & evolution of CSR. Concept of Charity, Corporate philanthropy, Corporate Citizenship, CSR-an overlapping concept. Concept of sustainability & Stakeholder Management. CSR through triple bottom line and Sustainable Business; relation between CSR and Corporate governance; environmental aspect of CSR; Chronological evolution of CSR in India; models of CSR in

India, Carroll's model; drivers of CSR; major codes on CSR;Initiatives in India.

UNIT II **(12 Hours)**

International framework for corporate social Responsibility, Millennium Development goals, Sustainable development goals, Relationship between CSR and MDGs.United Nations (UN) Global Compact 2011. UN guiding principles on business and human rights.OECD CSR policy tool, ILO tri-partite declaration

of principles on multinational enterprises and social policy.

UNIT III **(12 Hours)**

CSR-Legislation In India & the world. Section 135 of Companies Act 2013.Scope for CSR Activities under Schedule VII, Appointment of Independent Directors on the Board, and Computation of Net Profit's Implementing Process in India.

UNIT IV **(10 Hours)**

The Drivers of CSR in India, Market based pressure and incentives civil society pressure, the regulatory environment in India Counter trends. Performance in major business and programs. Voluntarism Judicial activism.

UNIT V **(10 Hours)**

Identifying key stakeholders of CSR & their roles. Role of Public Sector in Corporate, government programs that encourage voluntary responsible action of corporations. Role of Nonprofit &Local Self- Governance in implementing CSR; Contemporary issues in CSR & MDGs. Global Compact Self- Assessment Tool, National Voluntary Guidelines by Govt. of India. Understanding roles and responsibilities of corporate foundations.

Reference Books:

1. Corporate Social Responsibility: An Ethical Approach - Mark S. Schwartz

2. The World Guide to CSR - Wayne Visser and Nick Tolhurst

3. Innovative CSR by Lelouche, Idowu and Filho

4. Corporate Social Responsibility in India - Sanjay K Agarwal

5. Handbook on Corporate Social Responsibility in India, CII.

6. Handbook of Corporate Sustainability: Frameworks, Strategies and Tools - M. A. Quaddus, Muhammed Abu B. Siddique

7. Growth, Sustainability, and India's Economic Reforms – Srinivasan

8. Corporate Social Responsibility: Concepts and Cases: The Indian - C. V. Baxi, Ajit Prasad

9. .Mallin, Christine A., Corporate Governance (Indian Edition), Oxford University Press, New Delhi.

10. Blowfield, Michael, and Alan Murray, Corporate Responsibility, Oxford University Press.

11. Francesco Perrini, Stefano, and Antonio Tencati, Developing Corporate Social Responsibility-AEuropean Perspective, Edward Elgar. University of Delhi.

12. Sharma, J.P., Corporate Governance, Business Ethics & CSR, Ane Books Pvt Ltd, New Delhi.

13. Sharma, J.P., Corporate Governance and Social Responsibility of Business, Ane Books Pvt. Ltd, NewDelhi.

Course Outcome:

1.	To learn the concepts and theories of CSR
2.	To know the importance of sustainable development goals
3.	To understand the role of NGOs in promoting and implementing CSR initiatives in India
4.	To evaluate futuristic role of CSR in India
5.	To comprehend the role of nonprofit & Local Self- Governance in implementing CSR

CO/PO												
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	2	3
CO5	3	2	3	3	3	3	3	3	3	3	2	3
W.A	3	2.4	3	3	3	3	3	3	3	3	2.6	3

Social Development Issues and Challenges

Nature	**Area**	**Semester**	
Elective-II	Corporate SocialResponsibility	**III**	
Course Code	**Course Name**	**Credit/Distributions**	
22C3C2	Social Development IssuesandChallenges	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course Objectives:

- The students will be enlightened on the principles and practices of NGOs, Cooperatives and Corporate foundations
- The students will get introduced to various society registration acts

Practical Components:

- Visit two NGOs and record their social spending
- Understand the funding structure of two foreign and national organizations

UNIT I **(12 Hours)**

Introduction: What is the sociology of development - Neo-evolutionary, modernization and neomodernization theories of development - Marxist and neo-Marxist theories of development - Global approaches to development.

UNIT II **(12 Hours)**

Social work intervention and contemporary issues, Social work intervention and contemporary issues - Urban sociology, urban community development &municipal administration – Rural sociology, rural community development & Panchayati raj - Family welfare Women's welfare and child welfare.

UNIT III **(10 Hours)**

Social justice and Empowerment-Women Rights - Tribal Rights - Social Policy and Social Legislation in India: Planning in India - Rehabilitation & Resettlement Policy and Social Development - Rehabilitation Action Plan - CSR Policy and Rehabilitation &Resettlement

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UNIT IV **(12 Hours)**

World Bank and ADB standing on and Rehabilitation & Resettlement - Government of India Policy Guidelines and interventions - Millennium Development Goals – Sustainable Development Goals-Developmental Schemes in India - Social Security in India

UNIT V(10 Hours)

Corporate –Community Collaboration (CCC)and Social Development Social Development and Modes of CSR – Challenges and barriers to Corporate-Community Collaboration – CCC as CSR process and product-Socio-Economic Impact of CCC – Community Investment and Corporate Citizenship Programs.

References:

1. Willis, K. Theories and Practices of Development, London: Routledge.

2. Frank, A. G) "The Development of UnderdevelopmentJ

3. Timmons Roberts and Amy Bellone Hite (eds.) The Globalization and Development

Reader. Oxford: Blackwell

4. Roberts, T.J. and A. Hite (eds) From Modernisation to Globalisation: Perspectives on

Development and Social Change. (London: Blackwell, 2000)

5. Sklair, L. (ed.) Capitalism and Development. (London: Routledge, 1994)

6. Sklair, L. Sociology of the Global System. (London: Prentice-Hall, 1995)

7. Cohen, R. and P. Kennedy Global Sociology. (London: Macmillan, 2000)

8. Webster, A. Introduction to the Sociology of Development. (London: Macmillan, 1990)

Course Outcome:

1.	The students will be enlightened on the principles and practices of NGOs, Cooperatives and Corporate foundations
2.	Comprehend contemporary social issues and equate Social Work intervention
3.	Understand Social legislations and rights of the marginalised
4.	Cognize MDG, SDG and Government of India policies for Social security
5.	Recognize the need for Corporate community collaboration

CO/PO												
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	2
CO5	3	2	3	3	3	3	3	3	3	3	3	2
W.A	3	2.4	3	3	3	3	3	3	3	3	3	2.6

Corporate Governance and Ethics

Nature	**Area**	**Semester**	
Elective–III	**Corporate SocialResponsibility**	**III**	
CourseCode	**CourseName**	**Credit/Distributions**	
22C3C3	**CorporateGovernanceand Ethics**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course Objectives:

- The students should be able to appreciate the nature of business ethics, ethical leadership
- The students must comprehend theoretical aspects of corporate governance

Practical Components:

- Visit two MNCs and record their practice of ethical leadership
- Visit two MNCs and study the transparency and accountability pattern practiced at corporate governance system

UNIT I **(10 Hours)**

Meaning and definitions of Ethics. Nature of business ethics; the relationship between business ethics, corporate governance and ethical leadership; Kohlberg's six stages of moral development; levels of ethical analysis; concept of corporate integrity.

UNIT II **(12 Hours)**

Definition—Historical perspective of corporate governance and Issues in corporate governance—Theoretical basis of corporate governance—mechanism- corporate governance systems—Indian model of governance –What is good corporate governance—obligations towards society and stake holders. Theories underlying Corporate Governance (Stake holder's theory and Stewardship theory, Agency theory, Separation of ownership and control, corporate Governance Mechanism: Anglo-American Model, German Model,

Japanese Model, Indian Model, OECD, emphasis on Corporate governance, Ethics and Governance, Process and Corporate Governance (Transparency Accountability and Empowerment).

UNIT III **(12 Hours)**

Ethical decision making: Decision making (Normal Dilemmas and Problems): Application of Ethical theories in Business (i) Utilitarianism (J.Bentham and J.S. Mill), (ii) Deontology (I. Kant) Virtue Ethics (Aristotle).

Economic Justice: Distributive Justice, John Rawls Libertarian Justice (Robest Nozick) Ethical Issues in Functional Areas of Business.

Marketing: Characteristics of Free and Perfect competitive market, Monopoly oligopoly, Ethics in Advertising (Truth in Advertising). Finance: Fairness and Efficiency in Financial Market, Insider Trading, Green Mail, Golden parachute.

HR: Workers Right and Duties: Work place safeties, sexual harassment, whistle Blowing.

UNIT IV **(10 Hours)**

Role Players. Role of Board of Directors and Board Structure, Role of Board of Directors, Role of the Non- executive Director, Role of Auditors, SEBI Growth of Corporate Governance. Role of Government,Corporate governance in India, Kumaramangalam Birla Committee, CII, Report, Cadbury Committee.

UNIT V **(12 Hours)**

Accounting Standards and Accounting disclosures. Finance Reporting and Corporate Governance, Non Accounting Regulations in Corporate Governance, Corporate Governance & CSR

Reference Books :

1. Good Governance Issues and Sustainable Development: The Indian - Ed. R.N. Ghosh, Rony

Gabbay, Abu Siddique

2. The Quest for Sustainable Business - *Wayne Visser*

3. A Guide For Corporate Responsibility Managers - *Timothy J Mohin*

4. ISO 26000: The Business Guide to the New Standard on Social Responsibility; Lars Moratis and Tino

Cochius; Greenleaf Publishing; 2011

5. Strategic Corporate Social Responsibility: Stakeholders in a Global Environment, William B.

Werther, Jr., David Chandler

6. The Business Case for Corporate Social Responsibility: Understanding and ...

7. Philipp Schreck

8. Motivational Interviewing, Third Edition: Helping People Change (Applications of Motivational Interviewing) by William R. Miller and Stephen Rollnick (Sep 7, 2012)

9. Skills Training Manual for Treating Borderline Personality Disorder by Marsha M. Linehan (May 21, 1993)

10. Smart but Scattered: The Revolutionary "Executive Skills" Approach to Helping Kids Reach Their Potential by Peg Dawson and Richard Guare (Jan 2, 2009)

11. Business Ethics and Corporate Governance, C.S.V.Murthy, HPH

12. Business Ethics, Francis & Mishra, TMH

13. Corporate governance, Fernado, Pearson

14. Business Ethics & Corporate Governance, S. Prabakaran, EB

15. Corporate Governance, Mallin, Oxford

16. Corporate Governance & Business Ethics, U.C.Mathur, MacMillan.

Course Outcome:

1.	The students should be able to appreciate the nature of business ethics, ethical leadership
2.	The students must comprehend theoretical aspects of corporate governance
3.	Comprehend corporate ethics in different dimensions
4.	Understand different committees in Indian organizations
5.	Categorize Accounting standards and Non-Accounting Regulations in Corporate Governance

CO/PO												
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**

CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	2	3	3	3	3	2	3	3	3	3	3
W.A	3	2.4	3	3	3	3	2.8	3	3	3	3	3

Electives:Group-V

TOURISM

MANAGEMENT

Nature	**Area**	**Semester**	
Elective–I	**Tourism &Travel Management**	**III**	
Course Code	**Course Name**	**Credit/Distributions**	
22C3T1	**Tourism Management**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course Objectives:

1. To study the conceptual clarity of tourism.
2. To understand the types, typologies and its impacts on tourism.
3. To know the international, national and regional organizations of tourism.

Unit 1 **10 hrs**

Concepts of Tourism-Meaning-Definitions-Visitors-Excursionist-Tourist-Traveller-Hospitality- Nature- Forms -Tourism System-Purpose of Travel-Travel Motivators-Components of Tourism-Historical Development of Tourism-Tourism in India-- Factors affecting growth and development of International and national Tourism; Push and Pull Factors-and Approaches.

Unit II **08 hrs**

Impacts of Tourism-Tourism Industry**-**Significance of Tourism-Multipliers Effect-Economic-Socio-Cultural-Environmental Impacts of Tourism (Positive and Negative) - Case Studies.

Unit III **08 hrs**

Types and Typologies of Tourism: Heritage, Adventure, Cultural, Sports, MICE, Educational and Mass Tourism. **Alternative Tourism:** Eco, Rural, Agri and Farm and Yoga Tourism.

Unit IV **07 hrs**

Economics of Tourism –Demand and Supply-Factors Influencing on Tourism demand – Measuring the demand –Types of demand –Determinants of Tourism demand and Supply.

Unit V **07 hrs**

Tourism Organizations: Organization Structure and Functions of ITDC, STDCs, NTOs, PATA, UNWTO, TAAI, FHRAI, IATO, UFTAA.

Books for Reference:

1. Chottopadhyay, K. (1995): Economic Impact of Tourism Development; An Indian Experience, Kanishka Publishers, Delhi.

2. Cooper, C, Fletcher, J, Gilbert, D and Wanhill, S. (2002): Tourism: Principles and Practice, Addison Wesley Longman Publishing, New York, USA

3. Swain S K, Mishra J.M. (2012), Tourism Principles and Practices, Oxford University Press

4. Kamra & Chand (2002): Basics of Tourism, Theory Operation and Practice; Kanishka Publishers, New Delhi-02

5.Kamra, Krishna. K (2001): Economics of Tourism; Pricing, Impacts, Forecasting; Kanishka Publishers, New Delhi-02

Course Outcomes

1. To acquire the conceptual clarity of tourism.
2. To enhance the knowledge related to impacts on tourism.
3. To acquire the background knowledge of types, typologies of tourism.
4. To acquire the concepts relate to economics of tourism.
5. To acquire the knowledge of international, national and regional organizations of tourism.

Course Articulation Matrix -20C3T1

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	-	-	2	3	2	1	1	1	-	-
CO2	2	2	1	2	3	1	3	1	1	2	1	1
CO3	2	2	1	3	-	1	1	2	3	1	3	1
CO4	2	1	2	3	1	-	-	2	1	1	3	1
CO5	2	1	2	3	-	2	3	1	2	1	2	-
WA	**2**	**1.4**	**1.5**	**2.75**	**2**	**1.75**	**2.25**	**1.4**	**1.6**	**1.2**	**2.25**	**1**

GLOBAL TOURISM GEOGRAPHY

Nature	Area	Semester	
Elective-II	**Tourism &Travel Management**	**III**	
Course Code	**Course Name**	**Credit/Distributions**	
22C3T2	**GLOBAL TOURISM GEOGRAPHY**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

1. Course Outcomes

- To acquaint with the interdependence between geography and tourism;
- To familiarize on the locales, attractions, and accessibility to major tourist destinations across the continents; and
- To be able to plan tour itineraries of various countries across time zones.

Unit I **09 hrs**

Physical Geography, Time Calculation and Transport System: North, South and Central America – Europe – Africa - Asia & Australasia, Map Reading: Latitude - Longitude - International Date Line , Time Zones, Calculation of Time: GMT Variation , Tourism Transport Systems: Major Destinations and Routes - Major Railway Systems and Networks - Water Transport - Road Transport.

Unit II **08 Hrs**

Tourist Destinations in the Americas: Key Features- Special Interests- Activities-Travel Formalities, North American Destinations: Canada- the United States of America, Mexico, Central America: Bermuda-the Caribbean Islands, South American Destinations: Brazil-Uruguay, Argentina, Chile- Peru.

Unit III **08 Hrs**

Tourist Destinations in Europe: Key Features- Special Interests- Activities- Travel Formalities, Countries: United Kingdom- France- Italy- Spain-Switzerland- Netherlands and Germany.

Unit IV **08 Hrs**

Tourist Destinations in Africa: Key Features- Special Interests- Activities-Travel Formalities, Regions: Western Africa- Eastern Africa- South Central Africa- South Africa, Important Destinations: the Egypt- Mauritius-Seychelles.

Unit V **08 hrs**

Tourist Destinations, Key Features, Special Interests & Activities, Travel Formalities in Asia, Australia, and Oceania: Important Tourist Destinations of South Asian, South-East Asia and Far East, Tourist Destinations of the Middle East and West Asia, Australia, New Zealand, Fiji, Papua New Guinea and French Polynesia.

BOOKS FOR REFERENCES

1. Boniface, B., Cooper, R. & Cooper, C. (2016), World Wide Destinations – The Geography of Travel and Tourism. New York: Routledge.

2. Nelson, V. (2013). An Introduction to the Geography of Tourism. United Kingdom: Rowman and Littlefield Publisher.

3. Hall, M. (1999). Geography of Travel and Tourism. London: Routledge.

4. Hall, M., & Page, S.J. (2006). The Geography of Tourism and Recreation - Environment, Place and Space. London: Routledge.

5. Hudman, L.E., & Jackson, R. H. (2003). Geography of Travel and Tourism. London: Thomson.

6. IATA. (2009). Travel Information Manual. Netherlands: IATA Publications.

Course Outcomes:

1. To acquaint with the interdependence between geography and tourism;
2. To familiarize on the locales, attractions, and accessibility to major tourist destinations across the American continents.
3. To familiarize on the locales, attractions, and accessibility to major tourist destinations across the Europeancontinents.
4. To familiarize on the locales, attractions, and accessibility to major tourist destinations across the African continents.

To be able to plan tour itineraries of various countries across time zones.

Course Articulation Matrix - 20C3T2

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	-	3	1	2	1	3	1	3	1
CO2	2	2	3	1	3	2	1	-	3	1	2	-
CO3	2	1	1	2	1	1	2	1	1	2	1	-
CO4	2	1	1	1	1	1	1	1	1	-	-	-
CO5	2	1-	3	2	2	-	-	2	1	-	2	3
WA	**2**	**1.25**	**2**	**1.5**	**2**	**1.25**	**1.5**	**1.25**	**1.8**	**1.33**	**2**	**2**

HOTEL OPERATIONS AND MANAGEMENT

Nature	**Area**	**Semester**	
Elective-III	Tourism&TravelManagement	**III**	
CourseCode	**CourseName**	**Credit/Distributions**	
22C3T3	Hotel Operations &Management	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course Objectives:

1. To study the flow of activities and functions of hotel operations and management
2. To familiarize with hospitality, resort and spa management
3. To understand the functioning of various departments and its role in hospitality industry

Unit I **10 hrs**

Hotel and Hospitality Industry: Introduction to hotel and hospitality industry, Overview of core departments, types and classification of hotels, service industry characteristics - concept of "Atithi Devo Bhava", chain of hotels, leased and franchised hotels, future of hospitality industry, changing trends and hotel terminologies.

Unit II **8 hrs**

Front Office Operations: Front office organization, duties and responsibilities of front office staff, room tariff, meal plans, guest cycle, front office accounting and auditing, IT applications in front office, guest services.

Unit III **7 hrs**

Accommodation Management: Introduction to accommodation management, department hierarchy, duties and responsibilities, functions and operations of accommodation management, planning and organizing – inventories, budget, safety and security management.

Unit IV **8 hrs**

Food and Beverage (F & B) Management: An overview of F & B management, department hierarchy, duties and responsibilities, food production organization, operations and functions, catering service, banquet, club, Food and Beverage control.

Unit V 7 **Hrs**

Evaluating Hotel Performance and Revenue Management: Measuring methods of measuring hotel performance - occupancy ratio, average room rate, revenue per available room, yield management, guest relation management.

BOOKS FOR REFERENCE

1. Introduction to Hospitality Industry: A Text Book S.C. Bagri and Ashish Dahiya
2. Hospitality Today: Rocco M. Angelo, Andrew Vladimir
3. Hotel Housekeeping: A Training Manual by Sudhir Andrews
4. Hotel Housekeeping by Raghubalan
5. Hotel Front Office Operations and Management by Jatashankar R Tewari

6. Food production operation by PS bali
7. Professional Food and Beverage Service Management –Brian Varghese
8. Food Service Operations – Peter Jones and Cassel
9. Marketing management analysis & Planning – Kotler Philip
10. Hospitality Marketing – Wearne, Neil

Course Outcomes:

1. To acquire the concepts and functions of hotel and hospitality operations and management
2. To familiarize with front office operations.
3. To familiarize with accommodation management.
4. To familiarize with food & beverage management.
5. To enhance the knowledge related to evaluating hotel performance and revenue management

Course Articulation Matrix - 20C3T3

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	-	1	1	1	1	1	3	3
CO2	2	-	-	1	1	2	1	-	2	1	2	3
CO3	2	2	1	-	-	1	-	-	1	-	1	3
CO4	2	1	-	1	1	1	1	-	1	1	-	3
CO5	2	-	-	-	-	-	-	-	-	-	-	3
WA	**2**	**1.33**	**1**	**1**	**1**	**1.25**	**1**	**1**	**1.25**	**1**	**2**	**3**

SKILL DEVELOPMENT–3

Nature	**Area**	**Semester**	
Foundation	**General Management**	**III**	
Course Code	**Course Name**	**Credit/Distributions**	
22C313	**Skill Development-3**	**(L-0:T-0:P-1)Credit=01**	
		C1+C2	5+ 5 Marks
		C3	40Marks

Course Objectives

1. To think logically and appreciate the reasoning capability
2. To Involve the students in group discussion and mock interview exercises to enhance their employability

UnitI: **02 Hours**

Language enhancement tips, written communication skills, public speaking skills

Unit II: **02 Hours**

Exercises to develop right attitude, Self-Development, time management

UnitIII: **04 Hours**

Quantitative Aptitude & Logical Reasoning

UnitIV: **04 Hours**

GD & Mock GD

UnitV: **04 Hours**

Resume Writing, HR Interview, FAQs & Mock Interview

Course Outcomes:

1. Appreciate the reasoning capability
2. Sharpen employability skills

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	3	3	2	2	2	3	2	3	2
CO2	3	2	2	3	3	3	2	2	3	2	3	3
W.A	2.5	2	2	3	3	.5	2	2	3	2	3	2.5

Fourth Semester

EVENT

MANAGEMENT

Nature	Area	Semester	
Core	**GeneralManagement**	**IV**	
CourseCode	**CourseName**	**Credit/Distributions**	
22C401	EVENT MANAGEMENT	**(L-1:T-0:P-2)Credit=03**	
		C1+C2	30 Marks
		C3	70Marks

Course Objectives

The purpose of this course is to enable the students to acquire a general knowledge about the "event management" and to become familiar with management techniques and strategies required for successful planning, promotion, implementation and evaluation of special events with a special focus on case studies of the events.

1. To acquire an understanding of the role and purpose(s) of special events in the organizations.
2. To acquire an understanding of the techniques and strategies required to plan successful special events.
3. To acquire the knowledge and competencies required to pro- mote, implement and conduct special events.
4. To acquire the knowledge and competencies required to assess the quality and success of special events.

Unit I: Introduction **08 Hours**

Introduction -Nature, scope, significance and components of event, relationship between business and events, Responsibility of event planners, identifying suitable venue, layout.

Types of events and skills for Event management -Seminars & Conferences, Trade Shows, Sporting events, Product launch, Press conference. Skills for Event Management.

Unit II: Planning **10 Hours**

Concept, Nature and Practices in Event Management: Organizing and planning events, Customer relationship management, Staring and man- aging events business, Event coordination, Crisis planning - prevention - preparation - provision - action phase -

handling negative publicity -Different types of sponsorship - definition - objectives - target market - budget

Unit III: Preparing a proposal 12 Hours

Conducting market research - SWOT analysis - estimating attendance - media coverage - advertising - budget. Organizing the event - Purpose - venue - timing - guest list - invitations - food & beverages - room dressing - equipment - guest of honor - speakers - media - photographers - podium – exhibition and check lists.

Unit IV: Introduction to Event Marketing 12 Hours

Nature, need and importance – Marketing for event – Special feature of event marketing – Event Marketing Mix: Product, Price, Promotion, Distribution, Partnership, Segmentation and Targeting of the market for events–Types of advertising - promotions - website and text messaging, Social media platform and other digital media promotions used to market an event. Media invitations - photo-calls - press re- leases - TV opportunities - radio interviews. Special emphasis on 5 W's of event marketing.

Unit V: Preparing Human Resources for Event 14 Hours

Man power planning- training of employees – training needs identification – training methods Evaluation-Budget - cost of event - return on investment - media coverage - attendance – feedback

Reference Books:

1. Lynn Van Der Wagen& Brenda R. Carlos, Event Management for Tourism, Cultural, Business and Sporting Events, Pearson Prentice Hall, 2005
2. Event Management-PurnimaKumari
3. Event Management and Marketing: Theory, Practical Approaches and Plan- Anukrati Sharma, ShrutiArora
4. Event Management -Sandhya A Kale
5. Event Management: A Professional and Development Approach– AshutoshChaturvedi

Course Outcome

1. Enable students to evaluate the opportunities in event management and handle problems
2. Equip students to provide better services by using measuring techniques

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	3	3	2	3	1	3	2	3	2
CO2	2	3	2	2	3	2	2	2	2	2	3	3
Weighted Average	2.5	2.5	2.5	2.5	3.0	2.0	2.5	1.5	2.5	2.0	3.0	2.5

Electives: Group VI

BRAND MANAGEMENT

Nature	Area	Semester	
Elective - IV	**Marketing**	**IV**	
Course Code	**Course Name**	**Credit/Distributions**	
22C4M4	EVENT MANAGEMENT	**(L-1:T-0:P-2)Credit=03**	
		C1+C2	30 Marks
		C3	70Marks

Course Objectives

1. To analyze the importance of branding by visiting the various dimensions of brand promotion
2. To Study the factors that are associated with brand success and failure
3. To outline the importance of market planning and segmenting, targeting and positioning to make the product successful

Unit I: Introduction **12 Hours**

Introduction to Product & Brand Management, Product mix and Product line, Brand Image, Brand Equity, Brand Association, Brand Awareness, Brand Recall, Brand Positioning, Brand Narration, Brand Experience, Brand loyalty, Brand pull, Brand Promise.

Unit II: New Product Development Process **12 Hours**

Product Launch, , Launch Strategy, Reasons for New Product failures, Steps in Consumer Adoption Process, Product Life Cycle concepts.

Unit III: Market Planning **12 Hours**

Planning Process, Components of Marketing Plan – Analysis of com- petition, Product Portfolio Analysis, Customer Analysis, Segmenting – Targeting – Positioning (STP), Techniques of good positioning, Various Pricing strategies, Distribution strategies.

Unit IV: Designing and Implementing **10 Hours**

Marketing Programs to build Brand Equity, Important elements to build Brand Equity, Measuring the effectiveness of Brand Equity, Branding Strategies.

Unit V: Ethics in Brand Building **10 Hours**

Brand Marketing practices in India, Issues and Challenges of Indian Brands, Branding in rural India.

Practical Components:

1. Identify 5 major brands of India and analyze their branding efforts to bring about uniqueness to make the product successful
2. Do a mini project on social media that has been used to create a powerful brand image of a new entrant in car market
3. Interview 5 marketers and list out their brand positioning strategies to exploit the rural market

Reference Books

1. Product Management – Donald R. Lehman, Russel S. Winner and
2. Strategic Brand Management - Kevin L.Keller
3. The Brand Management Checklist – BrabVanauken and Man- aging Indian Brands – Ramesh Kumar
4. Application Exercises in Marketing – Ramesh Kumar
5. Brands & Branding by The Economist .
6. Strategic Brand Management by Jean Noel Kapferer
7. Building, Measuring, and Managing Brand Equity by Kevin L.Keller
8. Handbook of new product management – Christopher H.Luch

Outcomes:

1. Enable the students to develop and deliver effective presentation on a given brand .
2. Develop effective interpersonal communications

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	3	3	2	3	2	3	2	3	2
CO2	3	3	1	2	2	1	2	1	2	2	3	3
Weighted Average0	2.5	2.5	1	2.5	2.5	1.5	2.5	1.5	2.5	2	3	2.5

INDUSTRIALMARKETING

Nature	Area	Semester	
Elective - V	Marketing	IV	
CourseCode	CourseName	Credit/Distributions	
22C4M5	INDUSTRIALMARKETING	(L-2:T-0:P-1)Credit=03	
		C1+C2	30 Marks

Course Objectives

1. To Study the factors that are associated with business and consumer marketing
2. To acquaint with buying motivation and process involved in organizational customer
3. To study the product lifecycle of Industrial Marketing in the context of managing the business marketing

Unit I: Introduction **12 Hours**

The Nature and uniqueness of Industrial Marketing, Classification of Industrial Products, Classification of e-commerce, Difference between Business and Consumer Marketing, Classification of Business Consumers.

Unit II: Business Buying Behavior **12 Hours**

Identifying the Buying Behavior of Industrial, Buying Process and Buying Stages, Buying Center Roles, evaluation of unregistered suppliers and registered suppliers for identification, Marketing Information Sys- tem for Industrial Marketing.

Unit III: Segmenting, Targetingand Positioning **12 Hours**

Industrial Marketing Planning Process, Demand and Supply Analysis, Segmenting, Targeting and Positioning, Industrial Product Strategy and Product Policy, Product Portfolio, New Product Development, Product Life Cycles of Industrial Products.

Unit IV: Industrial Marketing Channels`

10 Hours

E-channels, Concept of Logistics and Supply Chain Management in Industrial Marketing. Pricing strategy for Business Markets, Competitive Bidding Technique, Types of Leasing, Personal Selling Process in Industrial marketing

Unit V: Key Account Management **10 Hours**

ABC Analysis, Selling through Internet, Issues and Challenges relating to transaction using software.

Practical Components:

1. Pay a visit to Government as well as a private manufacturing company and study the differences in their purchasing procedures, pricing, payment terms
2. Visit an industrial unit which sells directly as against using an intermediary or distributor and list out the advantages and drawbacks of selling directly
3. Imagine you are marketing a product like Air conditioners which can be sold to the large buyers (Business Marketing) like KSTDC as well as in the retail market and list out the differences in terms of Product, Price, Place and Promotion

Reference Books

1. Business Marketing Management – Michael Hutt and Thomas Speh, 8th Edition, Thomson Learning
2. Industrial Marketing – Reeder and Reeder (PHI)
3. Industrial Marketing – Richard Hill (AITBS)
4. Supply Chain Management – Sunil Chopra and Peter Meindl (1st Indian reprint, Pearson Education)
5. Business Marketing – Haynes
6. Business Marketing – Rangan

Course Outcome

1. Provide analytical skills to recognize the product manufacturing strategies that support broader marketing decisions.
2. Evaluate the capacity and demand management in industrial marketing.
3. Comprehend the art to explain the concept of product quality.

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	3	2	3	2	3	2	3	2
CO2	2	3	1	2	3	2	2	2	2	2	3	3
CO3	3	3	3	3	2	2	2	2	2	2	3	3
Weighted Average	2.7	2.7	2.0	2.7	2.7	2.0	2.3	2.0	2.3	2.0	3.0	2.7

SERVICES MARKETING

Nature	**Area**	**Semester**	
Elective - VI	**Marketing**	**IV**	
CourseCode	**CourseName**	**Credit/Distributions**	
22C4M6	**SERVICES MARKETING**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30 Marks**
		C3	**70Marks**

Course Objectives

1. To analyze the growing importance of Services marketing post LPG
2. To Study the factors affecting the customer expectation and satisfaction
3. To list the roles of effective service delivery to bring about the sales performance

Unit I: Introduction **10 Hours**

Definition and uniqueness of Services, Emerging trends in Services Marketing, Service Marketing mix, recent trends in Services Marketing, Growing potential of Service Industry post Liberalization.

Unit II Consumer Behaviors in Services **14 Hours**

Gap Analysis and Consumer Behavior, Gap Analysis and Strategies, Customer Perception and expectations, Factors influencing Customer Expectations, Services Design and Development, inevitability of Service Standards post globalization.

Unit III: Management of Service Performance **10 Hours**

Service Delivery and Performance, Employees role in Service Delivery - Boundary-spanning roles, Customer roles in Service Delivery, Delivering Services through

Intermediaries and Electronic Channels.

Unit IV: Management of Marketing channels **12 Hours**

Managing Demand, Managing Service Promises, Integrated Service, Marketing Communications, Pricing of Services, The integrated gap models for Service Quality

Unit V: Marketing of Services **10 Hours**

Health Care, Hospitality Services, Transport Services, Telecommunication Services, Consultation Services, Financial Services.

Practical Components:

1. Identify 5 major companies in service sectors that have generated employment opportunities in India
2. Visit 2 Car dealers and gather information on expectations and satisfaction from customers about recently introduced car
3. Visit a major Hospital and gather data to analyze the service gap experience by the patients

Reference Books

1. Services Marketing – Integrated Customer Focus Across The Firm – Valarie A. Zeithaml and M. J. Bitner
2. Services Marketing – People, Technology and Strategy – Lovelock
3. Services Marketing – Ravishankar
4. Marketing of Services – Jha
5. Marketing of Services – G.S. Bhatia
6. Marketing of Services – Sahu and Sinha

Cou Course Outcome

Provide analytical skills to recognize the service as strategy that support broader marketing decisions.

2.Evaluate the capacity and demand management in service marketing.

3.Comprehend the art to explain the concept of service quality.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	3	2	3	2	3	2	3	2
CO2	2	3	2	2	3	2	2	2	2	2	3	3
CO3	3	3	3	3	3	2	2	2	2	2	3	3
Weighted Average	2.66	2.66	2.66	2.66	32	2	2.33	2	2.33	2	3	2.66

INTERNATIONAL MARKETING

Nature	Area	Semester	
Elective - VII	**Marketing**	**IV**	
Course Code	**Course Name**	**Credit/Distributions**	
22C4M7	**INTERNATIONAL MARKETING**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30 Marks**
		C3	**70Marks**

Course Objectives

1. To explore the theories, trade and its barriers of India's foreign trade
2. To acquaint with International market entry strategies
3. To learn the factors affecting International marketing
4. To be acquainted with International economic Institutions and forums

Unit I: Introduction **10 Hours**

Introduction and Importance of International Marketing, Concepts in International Trade, Theories of International Trade, Trade Barriers, Panoramic view of India's Foreign trade since Independence.

Unit II: International Marketing Environment **10 Hours**

Economic, Political, Legal, Socio-cultural and Demographic environment.Market entry strategies – MNC's, Global marketers etc.

Unit III: International Marketing Mix **12 Hours**

Factors affecting International Marketing, International Marketing mix Strategy, Distribution Strategies and Types of Intermediaries in Inter- national Marketing.

Unit IV: Export Planning **12 Hours**

Export Finance, Letter of Credit, Export Licensing, Export Houses, Export risk and

Insurance, Export Promotion and Incentives provided by the Government of India. Import-Export policies of the Government of India.

Unit V:International Economic Institutions and Forums **12 Hours**

GATT, WTO, EFTA, LAFTA, EU, SAARC, BRICS, World Bank,IMF and other trading blocks and common marketing for International Business.

Practical Components:

1. Pay a visit to the web sites of companies like PEPSI, Huyndai, Addidas etc., and study their practices in India as well as their home country in the areas of technology, pricing, service, warranty, advertising etc.
2. A Khadi apparel manufacturer in Mysore wants to export his apparel to Sri Lanka and Australia. Based on internet research. What would be your advice to overcome trade barriers
3. Visit a company involved in export business. Learn and record the difficulties faced by them when they began to export

Reference Books

1. International Marketing – SakOnkvisit and John J. Shaw
2. International Marketing – Philip Cateora and John Graham
3. International Marketing – C.A. Francis

rse Outcome:

CO1: Develop an understanding of and an appreciation for basic international marketing concepts, theories, principles, and terminology.

CO2: Be able to demonstrate an awareness and knowledge of the impact of environmental factors (cultural, economic, institutional, legal and political) on international marketing activities.

CO3: Be capable of identifying international customers through conducting marketing research and developing cross-border segmentation and positioning strategies.

CO4: Be capable of developing a global marketing strategy by applying the basic concepts of product, pricing, promotion, and channels of distribution in international settings.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3

CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	2	1	2	2	2	3	3	2	2	2
CO4	3	2	3	3	2	3	3	2	2	2	3	3
W.A	3	2.2	2.7	2.5	2.5	2.7	2.7	2.7	2.7	2.5	2.7	2.7

Electives : Group VII

MERGER AND ACQUISITION

Nature	**Area**	**Semester**	
Elective - IV	**Finance**	**IV**	
Course Code	**Course Name**	**Credit/Distributions**	
22C4F4	**MERGER AND ACQUISITION**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30 Marks**
		C3	**70Marks**

Course Objectives

1. To understand the role of mergers and acquisitions in firm's strategy,
2. To Know the main concepts related to managing mergers and acquisitions, and
3. To apply common frameworks and tools related to mergers and acquisitions.

Unit I – Introduction to M & A 08 Hours

Types of merger– theories of mergers- operating, financial and managerial synergy of mergers – value creation in horizontal, vertical and conglomerate mergers – internal and external change forces contributing to M & A activities- Impact of M & A on stakeholders. Reasons for failures of M & A-synergy-types of synergy–value creation in M&A-SWOT analysis- BCG matrix (Theory)

Unit II: Merger Process 10 Hours

Procedure for effecting M & A-Five-stage model–Due diligence–Types, process and challenges of due diligence-HR aspects of M & A–Tips for successful mergers-Process of merger integration (Theory)

Unit III: Financial Evaluation of M& A 10 Hours

Merger as a capital budgeting-Business valuation approaches-asset based, market based

and income based Approaches-Exchange Ratio (Swap Ratio)-Methods of determining exchange rate. (Theory and Problems)

UnitIV: Accounting aspects of Amalgamation 14 Hours

Types of amalgamations (Amalgamation in the nature of merger and amalgamation in the nature of purchase)-Methods of Accounting-Pooling of interest method and Purchase method)–Calculation of purchase consideration-Journal entries in the books of transferor & transferee company-Ledger accounts in the books of transferor and transferee companies (Theory and Problems).

UnitV: Takeovers 14 Hours

Takeovers, types, and takeover strategies, - Takeover defenses – financial defensive measures – methods of resistance – anti-takeover amendments – poison pills Legal aspects of Mergers/amalgamations and acquisitions/takeovers- Combination and Competition Act- Competition Commission of India (CCI), The SEBI Substantial Acquisition of Shares and Takeover code

Practical Component:

1. Pick up any latest M&A deal.
2. Generate the details of the deal and then study the deal in the light of the following.
3. Nature of the deal: merger, acquisition, or takeover. If it is a merger, what type of merger is it?
4. Synergies likely to emerge to the combining and the combined firm(s) from the deal
5. The valuation for the merger
6. The basis for exchange rate determination

Recommended Books:

1. Rabi Narayan Kar and Minakshi, Taxmanns. Mergers Acquisitions & Corporate Restructuring - Strategies & Practices

2. SheebaKapil and Kanwal N. Kapil, Wiley. Mergers and Acquisitions

3. MachirajuH.R.(2003), New Age International (P) Ltd., Mergers, Acquisitions and Takeovers ,New Delhi

Reference Books:

1. Mergers etal.-Issues, Implications, and Case Law in Corporate Restructuring, Ramanujam S., Tata McGraw Hill Publishing House,2000.

2. Takeovers, Restructuring and Corporate Governance, Weston, Mitchell and Mulherin, 4th Edition, Pearson Education, 2003.

COURSE OUTCOME:

After completing the course student should be able to

CO1 Critically analyse Impact of Mergers and acquisition on stakeholders

CO2Make an informed decision with due diligence

CO3 Apply Business valuation approaches

CO4 Evaluate purchase consideration in Mergers and Acquisition

CO5Analyse the Legal aspect of merger and acquisition

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	2	3	3	3	3	3	3
CO2	3	3	3	3	3	2	3	3	3	3	3	3
CO3	3	3	3	3	3	1	2	1	1	3	3	3
CO4	3	3	3	3	3	3	3	2	2	3	3	3
CO5	2	2	3	3	1	1	2	2	2	2	2	2
Weighted Average	2.8	2.8	3	3	2.6	1.8	2.6	2.2	2.2	2.8	2.8	2.8

DERIVATIVES

Nature	Area	Semester	
Elective - IV	Finance	IV	
Course Code	Course Name	Credit/Distributions	
22C4F5	DERIVATIVES	(L-2:T-0:P-1)Credit=03	
		C1+C2	30 Marks
		C3	70Marks

Course Objectives:

1. To understand the features of financial derivatives.
2. To hedge risk and practice risk management using derivatives.
3. To explain the use of options and futures contracts for tactical portfolio strategies purpose
4. To provide an understanding of pricing financial derivatives, including familiarity with some central techniques, like the binomial model, and the Black-Scholes model
5. To explain the fundamentals of credit risk management and Value at Risk

Unit I: Introduction to Derivatives **10 Hours**

Forwards, Futures, Options, Swaps, trading mechanisms, Exchanges, Clearing house (structure and operations, regulatory framework), Floor brokers, Initiating trade, and Liquidating or Future position, Initial mar- gins, Variation margins, Marking to Market (MTM) ,Types and orders. Future commission merchant

Unit II: Forward and Future Contracts **10 Hours**

Forward contracts, futures contracts, Financial futures, Valuation of forward and future prices of index futures, Valuation of stock futures, Hedging using futures contracts, Hedging using stock & index future contracts, Adjusting Beta of a portfolio using future contract. Interest rate futures and currency futures.

Unit III: Valuation of options **12 Hours**

Options-Types of options, option pricing, factors affecting option pricing call and put options on dividend and non-dividend paying stocks, - mechanics of options - stock options - options on stock index - options on futures – interest rate options. Concept of exotic option. Hedging & valuation of option: basic model, Black and Scholes Model, Option Greeks. Arbitrage profits in options.

Unit IV: Options Contracts and

Trading Strategies **12 Hours**

Put-call parity; Trading strategies (Butterfly, Bull, Bear, Box Strangle) involving options

Unit V: Commodity Market in India **12 Hours**

Commodity futures and options, outlines of SEBI guidelines, working of NCDX, MCX.

Practice Component

1. Preparation of working structure of various stock exchange/ broking firms in India.
2. NISM Exam
3. Mock trading using Money control

Recommended books:

1. John C. Hull, Pearson Education. Options Futures & Other Derivatives,
2. Rajiv Srivastava, Oxford University Press, (2010) Derivatives and Risk Management,
3. Options & Futures- Vohra& Bagri, 2/e, TMH.

Reference Books:

1. Derivatives, Principles and Practice, Sundaram& Das, McGraw Hill.
2. Options & Futures –Edwards & Ma, 1/e, McGraw Hill.

Outcomes:

- Demonstrate a comprehensive knowledge of derivatives, its types and market structure
- Enable to select right kind of derivatives amongst forward, futures, options and swaps for risk hedging.
- Evaluate forward, futures, options pricing models for make high profit through risk hedging.
- Critically analyse trading/hedging strategies using derivatives options contracts.
- Comprehensive knowledge derivative products and their performance in Indian and global markets.

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	1	2	1	2	2	1	2	2	2
CO2	3	1	3	3	3	1	2	3	1	3	3	2
CO3	3	1	3	3	3	1	2	3	2	3	3	2
CO4	3	1	3	3	2	1	2	2	2	3	3	2
CO5	3	1	2	1	2	1	1	1	2	2	2	2
W.A	3	1	2.6	2.2	2.4	1	1.8	2.2	1.6	2.6	2.6	2

INTERNATIONAL FINANCE

Nature	Area	Semester	
Elective - VI	**Finance**	**IV**	
Course Code	**Course Name**	**Credit/Distributions**	
22C4F6	**INTERNATIONAL FINANCE**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30 Marks**
		C3	**70Marks**

Course Objectives:

1. To understand the International Financial Environment and the Foreign Exchange market.
2. To learn hedging and Forex risk management.
3. To learn the Firm's Exposure to risk in International environment and various theories associated with it.

Unit I: International Financial Environment **08 Hours**

Role of International Financial Management in Corporate Financial Management, Dynamics of Global Capital Flows, India's Balance of Payment, trends, direction and composition.CAD (current account deficit) problems. Economic and Monetary Union

Unit II: Foreign Exchange Market **14 Hours**

Function and Structure of the Forex markets, Foreign exchange market participants, Types of transactions and Settlements Dates, Exchange rate quotations, Determination of Exchange rates in Spot markets. Exchange rates determinations in Forward markets. Exchange rate behavior-Cross Rates- - Bid – Ask – Spread (Theory & Problems).

Unit III: Foreign Exchange Risk Management **12 Hours**

Hedging against foreign exchange exposure – Forward Market- Futures Market- Options Market-Currency Swaps-Interest Rate Swap- problems on both two way and three way Swaps (Theory & Problems).

Unit IV: International Parity Relationships &

Forecasting Foreign Exchange **14 Hours**

Measuring exchange rate movements-Exchange rate equilibrium–Factors effecting foreign exchange rate-Forecasting foreign exchange rates, Interest Rate Parity, Purchasing Power Parity &International Fisher effects, Arbitrage, Types of Arbitrage – Locational, Triangular and Covered Interest Arbitrage (Theory & Problems)

Unit V: International Investment Decision **08 Hours**

Risk Factors, country Risk, cost and Benefits International Capital Budgeting- Evaluation Criteria

Recommended Book:

1. MadhuVij-International Financial Management, 2nd Edition, 2003
2. AptePrakash G., International Finance, Tata McGraw Hill Ch1 Buckley, Adrian Multinational Finance, New York, Prentice Hall Inc.
3. Kim, Suk and Kim, Seung – Global Corporate Finance: Text and Cases, 2nd ed. Miami Florida, Kolb
4. Shapiro, Alan.C – Multinational Financial Management, New Delhi, Prentice Hall of India

Reference Books:

1. Shailaja G., International Finance, University Press India P. Ltd Ch.9, 15, 18, 19 and 20.
2. International Financial Management by Jeff Madura

COURSE OUTCOME:

After completing the course student should be able to

CO1 Analyse the international integrationof financial markets

CO2 Critically analysestrategies to Hedge against foreign exchange exposure

CO3 Apply financial knowledge in forecasting foreign exchange rates

CO4 Evaluate strategies used by Multinational Corporation

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	3	3	1	2	3	3	3	3	3
CO2	3	3	3	3	3	1	2	3	2	3	3	3
CO3	3	3	3	3	3	1	3	2	2	3	3	3
CO4	3	3	3	3	2	1	2	3	3	3	3	3
Weighted Average	3	2.75	3	3	2.75	1	2.25	2.75	2.5	3	3	3

TAXATION

Nature	Area	Semester	
Elective - VII	**Finance**	**IV**	
Course Code	**Course Name**	**Credit/Distributions**	
22C4F7	**TAXATION**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30 Marks**
		C3	**70Marks**

Course Objectives:

1. To provide the students with a comprehensive understanding of residential status in tax laws
2. To acclimatize the students with process of computing tax liability of Individuals
3. To understand corporate taxation system in the country
4. To know the deductions and exemptions available in the tax laws
5. To Provide Insight into GST

Unit I: Introduction to Direct Tax **12 Hours**

Basic concepts: assessment year, previous year, person, assessee, Income, charges on income, gross total income, capital and revenue receipts, residential status, receipt and accrual of income, connotation of income deemed to accrue or arise in India. Tax Planning, Tax Evasion and Tax Management. (Problems on residential Status of Individual assessee).

Unit II: Heads of Income **10 Hours**

Explanation under various heads of income .Income from salary (Basic problems), Income from House Property (Theory Only) Income under the head Profit and Gains of

Business or Professions and its computation scheme of business deductions (Problems on computation of income from business/ profession of Individual assessee).

Unit III: Income under Capital Gain **10 Hours**

Income under capital gain, basis of charge, transfer of capital asset, inclusion & exclusion from capital asset, capital gain, computation of capital gain(theory& problems), deductions from capital gains. Income from other Sources (Theory Only), Permissible deductions under section 80C to 80U. Setoff and carry forward of losses.

Unit IV: Computation of Tax Liability **10 Hours**

Computation of tax liability of a firm and partners.Computation of taxable income of a company with special reference to MAT.Corporate dividend Tax.

Unit V: Goods and Service Tax **14 Hours**

Introduction, Overview and Evolution of GST, Indirect tax structure in India , Introduction to Goods and Service Tax (GST) - Key Concepts , Phases of GST, GST Council , Taxes under GST, Cess, Registration under GST - Threshold for Registration, Regular Tax Payer, Composition Tax Payer, Unique Identification Number, Registration Number Format. Types of GST returns and their due dates, late filing, late fee and interest. ,

Practical Components:

1. Preparation of Income tax returns of Individual assesses.
2. Studying the online submission of Income tax returns

Reference Books:

Students' Handbook on Taxation: Manoharan T.N. &Hari G.R., 29/e, Snow White Publications Pvt. Ltd.

1. Goods and Service Tax with Customs Law: Srinivas K.R, Jayaprasad D &Bhavani M., Kalyani Publications.
2. Systematic Approach to Indirect Tax- Kumar, Sanjeev
3. Text Book of Indirect Tax – Sinha P.K
4. Dr. Vinod Singhania, Taxman Publication, New Delhi.

Outcomes:

- Comprehensive knowledge of income tax concept, functions and provisions.

- Illustrate theincome of different heads and gross total income of an Individual assessee
- Illustrate the concepts and features of assessment of profits and gains of individual and corporate assessee.
- Knowledge of different types of return filing
- Comprehensive knowledge of GST and its provisions

PO/PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	1	2	1	1	2	2	2	2	2
CO2	3	1	3	3	3	1	1	3	2	3	3	2
CO3	3	1	3	3	3	1	1	3	2	3	3	2
CO4	3	1	3	1	3	1	1	3	2	2	3	2
CO5	3	1	2	1	1	1	1	3	2	2	3	2
W.A	3	1	2.6	1.8	2.4	1	1	2.8	2	2.4	2.8	2

Electives: Group - VIII

STRATEGIC HUMAN RESOURCE MANAGEMENT

Nature	Area	Semester	
Elective -IV	Human Resource	IV	
Course Code	Course Name	Credit/Distributions	
22C4H4	STRATEGIC HUMAN RESOURCE MANAGEMENT	(L-3:T-0:P-0)Credit=03	
		C1+C2	30 Marks
		C3	70Marks

Course Objectives

1. To learn the fundamentals of SHRM framework and analyze the overall role of SHRM in business.
2. To improve the ability to think how SHRM should be used as a tool to achieve competitive advantage.
3. To understand the key element of SHRM and unite with organizational culture.

4. To magnify the numerous issues that crop in while implementing SHRM and find suitable remedies for the same.

Unit I: Context of Strategic HRM **12 Hours**

Introduction, An investment perspective of HRM – Adopting an in- vestment perspective, Valuation of assets, Understanding and measuring human capital, Human resource metrics, factors influencing investment oriented organizations, Impact of changes in technology - Telecommuting, Employee surveillance and monitoring, e-HR, Social networking, Workforce demographics & diversity on HRM – Generational diversity, Sexual orientation, individuals with disabilities, other dimensions of diversity.

Unit II: Strategic Role of HRM & Planning **12 Hours**

strategic HR Vs Traditional HR – Roles assumed by the HR function, HR roles in a knowledge based economy, SHRM critical HR competencies, Lepak and Snell's Employment models, Barriers to strategic HR, Strategic HR planning – Objectives of HR planning, Types of planning - aggregate & succession planning.

Unit III: Strategic Perspectives on

Recruitment, Training & Development **12 Hours**

Temporary Vs Permanent employees, Internal Vs External recruiting, methods of recruiting, Selection - Interviewing, testing, references; International Assignment, Diversity, Strategizing training & development, Needs assessment, objectives, Design and delivery, Evaluation.

Unit IV: Strategic Perspectives on

Performance Management **10 Hours**

Feedback & Compensation Use of the System, who evaluates, what to evaluate & how to evaluate, measures of evaluation, Compensation Equity, Internal equity, external equity, and Individual equity.

Unit V: Employee Separation **10 Hours**

Reduction in force, turnover, retirement, Global Human Resource Management – InternationalVs Domestic HRM, Strategic HR Issues in International Assignment, Repatriation.

Text Books

1. Jeffery Mello. (2012). *Strategic Management of Human Resources*. (3rd International ed.). Cengage Learning

2. Dr.S.S.Khanka. (2003). *Organizational Behavior*, (4th Ed.) S.Chand& Company pvt ltd

Reference Books

1. Luis R. Gomez-Mejia. David B.Balkin, Robert L. Cardy, (2001). *Managing Human Resources*, PHI.
2. S.K.Bhatia. (2007). *Strategic Human resources Management: Winning through People*, Deep & Deep Publication Pvt. Ltd.
3. Charles R, Greer. (2003). *Strategic Human Resource Management*. (2nd ed.). Prentice Hall
4. Kandula S.R. (2001). *Strategic Human Resource Development*. (New Title Edition). Prentice Hall India.

Course Outcomes

After the completion of the course, students will be able to:

1. Recognize the fundamentals of SHRM framework and analyze the overall role of SHRM in business.
2. Compute the strategic planning for Human resource.
3. Design the training program strategically as required for organization.
4. Design and implement compensation packages for human resource.
5. Gain insights on various operations of HRM at International level.

CO / PO ARTICULATION MATRIX

O/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	2	2	3	3	2	2	2	1	3	3
CO2	2	3	2	3	2	2	2	3	2	1	2	3
CO3	2	3	2	3	3	2	2	3	1	1	1	2
CO4	2	3	2	2	2	3	3	1	1	2	1	3
CO5	2	3	3	3	2	2	2	3	1	1	1	2
W.A	**2**	**3**	**2.2**	**2.6**	**2.4**	**2.4**	**2.2**	**2.4**	**1.4**	**1.2**	**1.6**	**2.6**

INDUSTRIAL LABOUR LEGISLATION

Nature	Area	Semester	
Elective -V	**Human Resource**	**IV**	
Course Code	**Course Name**	**Credit/Distributions**	
22C4H5	**INDUSTRIAL LABOUR LEGISLATION**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30 Marks**
		C3	**70Marks**

Course Objectives

1. To know the development and the Judicial setup of Labour Laws
2. To learn the salient features of Welfare and Wage Legislation
3. To learn the Laws relating to IR, Social Security and Working Conditions

Unit I: Industrial Disputes Act 1947 **12 Hours**

Emphasis on Sec 2 (all definitions), 9A, 10, 12, 17 , 18 , 22 , 23 , 24, 25, Chapter V B, Up to Sec 25 (S) and Sec33. Karnataka ID Rules, Industrial Employment (Standing Orders) Act, Karnataka Standing Orders Rules.

Unit II: Indian Factories Act 1948 **12 Hours**

Karnataka Factory Rules, Contract Labour (Regulation and Abolition) Act 1971, Karnataka Contract Labour Rules.

Unit III: Payment of Gratuity Act 1982 **10 Hours**

Payment of bonus act 1965, Karnataka Industrial Establishments (National Festival Holidays) Act

Unit IV: ESI Act 1948 **12 Hours**

Employees' provident fund and miscellaneous provisions act 1952, workmen's compensation act 1932. Payment of wages act 1936.

Unit V: Code of Discipline in Industries **10 Hours**

Report of the second national labour commission 2002.Latest ILO deliberations on labour legislation in developing countries.

Practical Component

1. Students are taken to Labour Court to get practical exposure on labour proceedings
2. Arrange a debate on Constitutional provisions of Labour Law

Reference Books

1. P.L.Malik. (2013). Industrial Laws, (15th Ed.). Eastern Book Publishing
2. R. J Reddy (2004). Industrial Law, APH Publishing
3. S.N Mishra (2014). Industrial and Labour Law. (27th ed.). Central Law Publications

Course Outcomes

After the completion of the course, students will be able to:

1. Recognize the existing provisions provided under Factories Act.
2. Assess the provisions under Industrial Disputes Act.
3. Gain insights on payment of Gratuity Act.
4. Analyze the provisions under employees' Provident Fund and Workmen's Compensation Act.
5. Recognize the ILO deliberations and code of discipline in industries.

CO / PO ARTICULATION MATRIX

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	2	2	3	2	3	1	2	1
CO2	2	2	2	3	3	3	3	3	1	2	3	3
CO3	2	3	3	3	3	2	2	2	1	3	3	3
CO4	2	1	3	2	3	3	2	2	3	3	2	3
CO5	2	2	3	3	2	2	3	3	2	-	1	3
W.A	**2**	**2.2**	**2.8**	**2.8**	**2.6**	**2.4**	**2.6**	**2.4**	**2**	**1.8**	**2.2**	**2.6**

INDUSTRIAL RELATIONS

Nature	Area	Semester	
Elective -VI	Human Resource	IV	
Course Code	Course Name	Credit/Distributions	
22C4H6	INDUSTRIAL RELATIONS	(L-2:T-0:P-1)Credit=03	
		C1+C2	30 Marks
		C3	70Marks

Course objectives

1. To understand the importance of Human Relations at work
2. To distinguish the procedures concerning Worker Participation and Participatory Institutions and Instruments of Trade Union
3. To distinguish Employee Rights & Obligations according to the scope of employment
4. To analyze the field of Labor Relations in an Interdisciplinary Manner
5. To Synthesize the proposals for Legislative Initiatives

Unit I: Industrial Relations **12 Hours**

Historical background, concept, Meaning and scope of IR, stake holders of IR, various factors influencing IR, Perspectives/Approaches to IR- Unitary, Pluralist, Radical, Psychological approach, Sociological approach, Human Relations approach, Socio ethical approach, Gandhian/ Trusteeship approach, Systems approach, Essentials of sound IR policy, IR strategies, Legal frame work: The Industrial Disputes Act 1947, Industrial conflict Disputes – Causes and Consequences of Industrial Conflicts in India, Conflict resolution.

Unit II: Trade Unions and Related aspect **10 Hours**

Trade union movement and growth of TU in India, national level federations, trade union problems, trade union organization, leadership and management of Trade union, trade union act 1926, registration of trade union, employers association – objectives, origin and

growth, legal status, problems of trade unions.

Unit III: Grievances and Disciplines **12 Hours**

Grievances, redressal, discipline, standing orders, acts of misconduct, show cause notice, suspension, Enquiry procedure, Principles of natural justice, Punishments, Demotion suspension, Termination, Removal and dismissals, Conflicts – Industrial disputes –Lay off, Termination simplicitor, Retrenchment, closures, VRS.

Unit IV: Collective Bargaining **10 Hours**

Concept, its relevance in IR, CB as an institution, ILO perception of CB, Objectives of CB, Structure, Functions, process, negotiations, bargaining approaches & techniques, patterns of bargaining.

Unit V: Settlements **12 Hours**

Types of settlement wage settlement, bonus settlement, productivity settlement, VRS settlement, Union issues settlement, Reorganization settlement, transfer, Layoff, retrenchment and closure settlements.

Practical Component

1. Give a case of collective bargaining and ask the students to role play
2. Arrange a debate in the classroom about rights and duties of trade union of workers

Text Books

1. Mamoria, Mamoria, Gankar,. (2016). *Dynamics of Industrial Relations.* Himalaya Publishing House
2. C S VenkataRatnam. (2017). *Industrial Relations*(2nd ed.). Oxford University Press

Reference Books

1. A M Sarma. (2016). *Industrial Relations &Labour Laws*. (Revised ed.). Himalaya Publishing House
2. ArunMonnappa. (2017). *Industrial Relations &Labour Law*. (2nd ed.). McGrawhill Education

CO1. To familiarize with the role of management and unions in the promotions of industrial relations.

CO2. Be acquainted with the concepts, principles and issues connected with trade unions.

CO3. Be acquainted with the concepts, principles connected with collective bargaining,

grievance redressal, and employee discipline and dispute resolution**.**

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	2	-	3	-	3	3	-	2	-
CO2	3	-	2	-	3	3	-	2	-	-	-	-
CO3	3	3	3	1	3	3	1	2	3	3	2	-
Weighted Average	3	2.5	2.67	1.5	3	3	1	2.33	3	3	2	-

MANAGING KNOWLEDGE WORKERS

Nature	**Area**	**Semester**	
Elective -VI	**Human Resource**	**IV**	
Course Code	**Course Name**	**Credit/Distributions**	
22C4H7	**MANAGING KNOWLEDGE WORKERS**	**(L-3:T-0:P-0)Credit=03**	
		C1+C2	**30 Marks**
		C3	**70Marks**

Course objectives

1. To analyze and define the links between Knowledge Management, Organizational Learning
2. To analyze the fundamental elements pertaining to Knowledge Management
3. To examine and Evaluate the Role of Leadership in Facilitating Human Infrastructure to enable best practices
4. To Identify the Drivers and Inhibitors of Effective KM Practices to promote Innovation and improving projects and management practices at a large

Unit I: Knowledge Management **12 Hours**

The changing nature of organizations – workforce composition, evolving work roles and responsibilities, Team work, Relationship building, Communication, Leadership, Decision making, Change management, worker motivation, Infrastructure, concept of Knowledge management, Drivers of knowledge management, Knowledge as an asset –

Explicit knowledge and Tacit knowledge, Organizational knowledge, Knowledge management as an emerging concept - leadership and knowledge management, Developing a knowledge culture, learning & develop- mental organization, Asset based corporate development, Applying knowledge to work practices, Knowledge Systems, Developing a Knowledge Service, The challenge for Strategic Knowledge Leadership.

Unit II: Strategic Knowledge Management **12 Hours**

Models of knowledge management, Knowledge management Life cycle, knowledge workers, Skills and competencies of knowledge workers, phases of knowledge development – Knowledge sourcing, Knowledge Abstraction, Knowledge Conversion,Knowledge Diffusion, Knowledge development and refinement, Knowledge management infrastructure – Managerial infrastructure, Technological infrastructure, Social infrastructure, harnessing organizational knowledge, Enabling Knowledge Transference, The five P's of strategic management, Building knowledge management into the StrategicFramework.

Unit III: Knowledge Leader **10 Hours**

Contributory Disciplines to Knowledge Leadership - Librarianship, Information Technology, Human Resource Management, Business management, The generic Attributes of a knowledge leader – Strategic visionary, Motivator, Communicator, Change agent, Coach Mentor and model, Learning facilitator, Knowledge Executor, Specific knowledge Leadership Roles – Strategic knowledge leader, Core leaders, Leading Knowledge Teams – Self managed knowledge teams, Virtual knowledge teams, Leading a Knowledge network, Recruiting and Selecting Knowledge Leaders.

Unit IV: Developing and sustaining

a Knowledge Culture **10 Hours**

Knowledge Culture Enablers – Core values, Structural support, Enacted values, Interaction with colleagues, maintaining the Knowledge Culture during Change, Reviewing the existing knowledge culture, implementing knowledge culture enhancement programs, maintaining the Knowledge Culture.

Unit V: Knowledge Management &

HRM Practices **12 Hours**

Structural Support for knowledge management, Impact of Organizational Structure on Knowledge Management – Functional structure, Divisional structure, Matrix model, Staffing – workforce planning, Defining core competencies, Selection and Recruitment,

Induction orientation and acculturation, work context management, Performance Management – Performance standards, performance management process, providing feedback, Rewarding high achieving Knowledge Workers, Learning & Development – Individual learning, succession planning, Learning transfer, Organizational Evaluation and Review – Exit interviews, Performance measures, Organizational development

Text Books

1. SheldaDebowski. (2005). *Knowledge Management*. (1st ed.). John Wiley India Pvt. Ltd.
2. Elias M.Awad& Hassan M.Ghaziri. (2004). *Knowledge Management*. Pearson Education.
3. Carl Davidson & Philip Voss. (2003). *Knowledge Management*. Vision Book India

COURSE OUTCOME

CO1: Recognize the significance of knowledge workers in an organization

CO2: Gain knowledge on effective harnessing of organizational knowledge

CO3: Identify the role of knowledge leader in achieving team goals

CO4: Realize the association between knowledge management and HRM practices

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	3	2	1	-	2	-	-	3	2	2	-
CO2	2	3	2	2	-	2	2	-	3	1	-	1
CO3	3	1	-	-	-	-	-	-	3	-	3	2
CO4	3	2	-	-	-	-	-	-	-	-	2	1
W.A	2	2.25	1	0.75	-	1	0.5	-	2.25	0.75	1.75	1

Electives: Group IX

Brand Management

Nature	Area	Semester	
Elective-IV	Corporate Social Responsibility	IV	
CourseCode	CourseName	Credit/Distributions	
22C4C4	Brand Management	(L-2:T-0:P-1)Credit=03	
		C1+C2	30Marks
		C3	70Marks

Course Objectives

- Analyze the importance of branding by visiting the various dimensions of brand promotion
- To Study the factors that are associated with brand success and failure
- Outline the importance of market planning and segmenting, targeting and positioning to make the product successful

UNIT I: **12 Hours**

Introduction to Product & Brand Management, Product mix and Product line, Brand Image, Brand Equity, Brand Association, Brand Awareness, Brand Recall, Brand Positioning, Brand Narration, Brand Experience, Brand loyalty, Brand pull, Brand Promise.

UNIT II: **12 Hours**

New Product Development Process, Product Launch, , Launch Strategy, Reasons for New Product failures, Steps in Consumer Adoption Process, Product Life Cycle concepts. **(12 Hours)**

UNIT III: **12 Hours**

Market Planning, Planning Process, Components of Marketing Plan – Analysis of competition, Product Portfolio Analysis, Customer Analysis, Segmenting – Targeting – Positioning (STP), Techniques of good positioning, Various Pricing strategies, Distribution strategies.

UNIT IV: **10 Hours**

Designing and Implementing Marketing Programs to build Brand Equity, Important elements to build Brand Equity, Measuring the effectiveness of Brand Equity, Branding Strategies.

UNIT V: **10 Hours**

Ethics in Brand Building, Brand Marketing practices in India, Issues and Challenges of Indian Brands, Branding in rural India. CSR and Marketing, CSR as Organizational Brand Building

Practical Components:

- Identify 5 major brands of India and analyze their branding efforts to bring about uniqueness to make the product successful
- Do a mini project on social media that has been used to create a powerful brand image of a new entrant in car market
- Interview 5 marketers and list out their brand positioning strategies to exploit the rural market

Reference Books

- Product Management – Donald R. Lehman, Russel S. Winner and
- Strategic Brand Management - Kevin L.Keller
- The Brand Management Checklist – BrabVanauken and Managing Indian Brands – Ramesh Kumar
- Application Exercises in Marketing – Ramesh Kumar
- Brands & Branding by The Economist .

- Strategic Brand Management by Jean Noel Kapferer
- Building, Measuring, and Managing Brand Equity by Kevin L.Keller
- Handbook of new product management – Christopher H.Luch
- Brand Management Practices – Issues and Trends by K. Sasikumar, K.S. Chandrasekar

Course Outcome

1.	Analyze the importance of branding by visiting the various dimensions of brand promotion
2.	To Study the factors that are associated with brand success and failure
3.	Outline the importance of market planning and segmenting, targeting and positioning to make the product successful
4.	Define the concept of brand equity
5.	Understand Challenges of Indian Brands, brand building and rural branding

CO/PO												
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	2	3	3	3	3	3	3	2	3
CO5	3	2	3	3	3	3	3	3	3	3	2	3
W.A	3	2.4	3	2.8	3	3	3	3	3	3	2.6	3

International Business and CSR

Nature	Area	Semester	
Elective- V	Corporate SocialResponsibility	IV	
CourseCode	CourseName	Credit/Distributions	
22C4C5	International Business and CSR	(L-2:T-0:P-1)Credit=03	
		C1+C2	30Marks
		C3	70Marks

Course Objectives:

- The students will be highlighted on various concepts of International Business process
- The students will get introduced to relationship between CSR and International business

Practical Components:

- Students can visit two successful MNCs and record the business processes
- Prepare a mini project on the CSR activities conducted by two MNCs

UNIT I **(14 Hours)**

International Business –Definition – Internationalizing business-Advantages – Concept of Liberalization Privatization and Globalization - factors causing globalization of business-international business environment – country attractiveness –Political, economic and cultural environment –Effect of

Liberalization Privatization and Globalization, Liberalization Privatization.

UNIT II **(14 Hours)**

Globalization: Meaning, Drivers, And International trade theory: Mercantilism, Absolute advantage, Comparative advantage, Globalization and its impact on Indian economy-meaning and levels of globalization- factors are influencing globalization -globalization strategy for a company- a critique of globalization- globalization in India- steps towards globalization – effects of globalization. GATT and WTO -multilateral trade negotiation and agreements and implications, the global recession.

UNIT IV **(14 Hours)**

Convention on Bio – Diversity 1992, WTO Agreement of 1994, KYOTO Protocol of 1997.Relationship of WTO, CBD and KYOTO for India, Roles and Benefits from WTO, CBD and KYOTO, Relationship between CSR and WTO, CBD & KYOTO. Sustainable Forestry and Natural Recourses vis-à-vis CBD,

Non-Tariff Barriers of WTO vis-à-vis CSR, Green House Emission and KYOTO Protocol.

UNIT V **(14 Hours)**

Broad issues in Globalization: Emerging Global Players, Ethical issues in Context of International Business, The Social Responsibility of the Global Firm, Cross-Culture Communication

And Negotiation, Leadership Issues, Business Improvement: Integrating Quality, Innovation, and Knowledge Management, The Role of the Parent: Managing the Multinational Business Firm,

Organizing and Structuring the Multi Business Firm.

Reference Books:

1. International Business, Francis Cherunilam, Fifth Revised Edition, PHI Learning Pvt. Ltd.

2. Donald Ball Wendell H McCullooch, Michael Geringer, Minor, Jeanne M Mcnett – International

Business by TATA MCGRAW – HILL

3. International Business – Roger Bonnet

4. International Business – Michal Zinkata

5. International Business – Richard M Shaffer

6. India's Foreign Trade – Vadilal

7. Buckley , Adrian – Multinational Finance, New York, Prentice Hall Inc.m

8. International Financial Management – Jeff Madura

9. Lasserre, Philippe (2007). Global Strategic Management, Palgrave MacMillan.

10. John D Daniels, Lee H Radebaugh Daniel P Sullivan , Prashant Salwan (2010). International Business Environments and Operations, Pearson Education

Course Outcome:

1.	The students will be highlighted on various concepts of International Business process
2.	The students will get introduced to relationship between CSR and International business
3.	Understand Globalization and its impact on Indian economy
4.	Get introduced to international conventions relevant to CSR
5.	Understand the challenges in Managing the Multinational Business Firm,

CO/PO												
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	-	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	2	3
CO5	3	2	3	3	3	3	3	3	3	3	2	3
W.A	3	2.2	3	3	3	3	3	3	3	3	3	3

Sustainability & Stakeholder Management

Nature	**Area**	**Semester**	
Elective-VI	**Corporate Social Responsibility**	**IV**	
Course Code	**Course Name**	**Credit/Distributions**	
22C4C6	Sustainability &StakeholderManagement	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course Objectives:

- The students will be introduced to the concepts and importance of sustainability
- The students will get insights into stakeholders management

Practical Components:

- Students can visit two NGOs and record their contribution towards the sustainability practices
- Write any two strategies employed to engage stakeholders in companies

UNIT I

Sustainability and sustainable development: Why sustainability?- Concept and seven key factors of Sustainability – UN Sustainable Development Goals and Sustainability – Environmental Sustainability : Global Initiatives on Environmental Sustainability.

UNIT II

Corporate Sustainability Footprint: The Value Chain Footprint - Sustainability and Greenhouse gases (GHG) - Facility Operations: Energy Efficiency & Green Building - Sustainable Procurement &Logistics.- Sustainable Production and Consumption. Corporate Sustainability Footprint - Resource use and loss – Process view and Life Cycle Assessment - Industry and competition analysis.

UNIT III

Business (corporate) sustainability: Evolution of business approaches to SD- Business Sustainability – UN Global Compact - Key players in sustainability field: governments, NGOs, international and supranational organizations.

Stake holder mapping, Internal Stakeholders, External Stake holders, Stakeholder Theory & Stakeholder Engagement Overview. Stakeholder's relations. Pro-poor development.

UNIT IV

Corporate Sustainability Strategy: Developing strategy through benchmarking and balanced scorecard - Intrapraneurs and employee engagement - Operationalizing Sustainability - Corporate Sustainability Management System: Determining sustainability "current state" – Corporate level; Benchmark sustainability program – Gap analysis; Creating sustainability strategy - Sustainability Challenges and Solutions.

UNIT V

Corporate Stakeholder Engagement : Multilateral engagement (UN/World Bank/OECD) - Government engagement - NGO's – influence and engagement -Trade associations (WBCSD) - Stakeholder interests and engagement -Creating a comprehensive Stakeholder engagement strategy - Implementation and engagement- Analysis and evaluation.

Reference Books:

1. Farver, *Mainstreaming Corporate Sustainability*

2. Blackburn, *The Sustainability Handbook*

3. "R. Edward Freeman on Stakeholder Theory"

4. Rate the Raters Phase Four: The Necessary Future of Ratings (Sustain Ability, July2011); scan key points

5. CSRHUB.com (review high level)

6. Accountability AA1000 Stakeholder Engagement Standard (AA1000SES) •

Account Ability& UNEP: From Words to Action: The Stakeholder Engagement Manual(Volumes One & Two) (review high level)

7. Accountability & UNEP: From Words to Action: The Stakeholder Engagement Manual(Volumes One & Two)

Course Outcome:

1.	The students will be introduced to the concepts and importance of sustainability
2.	The students will get insights into stakeholders' management
3.	Awareness of governments, NGOs, international and supranational organizations in corporate sustainability
4.	Ability to Develop strategies for sustainability
5.	Knowledge of stake holder management, Challenges and Solutions.

CO/PO												
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	2	3
W.A	3	3	3	3	3	3	3	2.8	3	3	2.8	3

INDUSTRIAL RELATIONS

Nature	Area	Semester	
Elective-VII	**Corporate Social Responsibility**	**IV**	
CourseCode	**Course Name**	**Credit/Distributions**	
22C4C7	**Industrial Relations**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Course objectives

1. To understand the importance of Human Relations at work
2. To distinguish the procedures concerning Worker Participation and Participatory Institutions and Instruments of Trade Union
3. To distinguish Employee Rights & Obligations according to the scope of employment
4. To analyze the field of Labor Relations in an Interdisciplinary Manner
5. To Synthesize the proposals for Legislative Initiatives

Unit I: Industrial Relations **12 Hours**

Historical background, concept, Meaning and scope of IR, stake holders of IR, various factors influencing IR, Perspectives/Approaches to IR- Unitary, Pluralist, Radical, Psychological approach, Sociological approach, Human Relations approach, Socio ethical approach, Gandhian/ Trusteeship approach, Systems approach, Essentials of sound IR policy, IR strategies, Legal frame work: The Industrial Disputes Act 1947, Industrial conflict Disputes – Causes and Consequences of Industrial Conflicts in India, Conflict resolution.

Unit II: Trade Unions and Related aspect **10 Hours**

Trade union movement and growth of TU in India, national level federations, trade union problems, trade union organization, leadership and management of Trade union, trade union act 1926, registration of trade union, employers association – objectives, origin and growth, legal status, problems of trade unions.

Unit III: Grievances and Disciplines **12 Hours**

Grievances, redressal, discipline, standing orders, acts of misconduct, show cause notice, suspension, Enquiry procedure, Principles of natural justice, Punishments, Demotion suspension, Termination, Removal and dismissals, Conflicts – Industrial disputes –Lay off, Termination simplicitor, Retrenchment, closures, VRS.

Unit IV: Collective Bargaining **10 Hours**

Concept, its relevance in IR, CB as an institution, ILO perception of CB, Objectives of CB, Structure, Functions, process, negotiations, bargaining approaches & techniques, patterns of bargaining.

Unit V: Settlements **12 Hours**

Types of settlement wage settlement, bonus settlement, productivity settlement, VRS settlement, Union issues settlement, Reorganization settlement, transfer, Layoff, retrenchment and closure settlements.

Practical Component

1. Give a case of collective bargaining and ask the students to role play
2. Arrange a debate in the classroom about rights and duties of trade union of workers

Text Books

1. Mamoria, Mamoria, Gankar,. (2016). *Dynamics of Industrial Relations.* Himalaya Publishing House

2. C S VenkataRatnam. (2017). *Industrial Relations*(2nd ed.). Oxford University Press

Reference Books

1. A M Sarma. (2016). *Industrial Relations &Labour Laws*. (Revised ed.). Himalaya Publishing House

2. ArunMonnappa. (2017). *Industrial Relations &Labour Law*. (2nd ed.). McGrawhill Education

Outcomes:

CO1. To familiarize with the role of management and unions in the promotions of industrial relations.

CO2. Be acquainted with the concepts, principles and issues connected with trade unions.

CO3. Be acquainted with the concepts, principles connected with collective bargaining, grievance redressal, and employee discipline and dispute resolution**.**

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	2	-	3	-	3	3	-	2	-
CO2	3	-	2	-	3	3	-	2	-	-	-	-
CO3	3	3	3	1	3	3	1	2	3	3	2	-
Weighted Average	3	2.5	2.67	1.5	3	3	1	2.33	3	3	2	-

Electives:Group-X

Travel Agency and Transport Management

Nature	**Area**	**Semester**	
Elective-IV	**Tourism & Travel Management**	**IV**	
CourseCode	**CourseName**	**Credit/Distributions**	
22C4T4	**Travel Agency and Transport Management**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Learning Objective: The main objective of the course is to equip the students with a set of theoretical and practical knowledge relating to travel agency tour operation and transportation management.

Unit 1 10 Hours

Introduction- Definition of Travel Agency –History & Growth of– Scope –Role - Functions and Types of Travel Agency - Ancillary Tourism Service - Sources of Income. – Differentiation and Interrelationship between Travel Agency and Tour Operators - Contributions in Growth and Development of Tourism.

Unit II 11 Hours

The Modern Tour Industry: Evolution of Tour Operation Business – Definition – Types - Functions – Types of Tours - Tour Formulations, Tour Designing Process – Tour Operations Process – Holiday Packages – Types - Components of Package Tour - Basic

Principles in Packaging - Factors Affecting Tour Design and Selection. Developing Linkages with Principle Suppliers – Itinerary – Meaning, Types of Package Tour (Prepare Itinerary Of Assumed Tour Packages) –Tour Guides And Escorts - Types, Role And Responsibilities.

Unit III 05 Hours

Travel Formalities: Passport, Visa, Foreign Exchange, Travel Insurance, Customs, Immigration and Health Regulation along with travel documents required for visiting North East region of India: Restricted Area Permit (RAP) and Inner Line Permit (ILP).

Unit IV 10 Hours

Introduction to Tourism Transport System: Airlines Transportation - The Airlines Industry - Origin and Growth - Scheduled and Non-scheduled Airlines services - Role of IATA and ICAO. Airports and Major Airlines. Road Transport in Tourism: Growth and Development of Road Transport system in India - Role of Regional Transport Authority. Rail Transport - Major Railways to tourists - Indrail pass – Eurail pass – Brit rail pass, Luxury Tourist Trains in India. Cruise ships – Types – Cruise liners – Major Cruise tourism destinations - Future prospects. Car Rental and International car hire.

04 Hours

UNIT V: Aviation Management- Aviation, Types of Aircrafts, Airport Layout, Types of Air Fares, Role of GDS and CRS in Air Travel.

Books for Reference:

1. An introduction to Travel and Tourism, McGraw Hill Int. Edition. 1994

2. Laws, Eric, Managing Packaged Tourism, International Thomson Business Press, Edition 1997.

3. Negi, Jagmohan, Toursit Guide and Tour operation, Kanishka Publishers 2004.

4. Syratt, Gwenda Manual of Travel Agency Practices, Elsevier, Butterworth Heinmann, Edition 2003.

5. Pender, Lesley, Travel Trade and Transport. An Introduction, Edition 2001

6. Holloway, J.C., (1983), The Business of Tourism, McDonald and Evans, Plymounth.

7. Syratt Gwenda, (1995). Manual of Travel Agency Practice, Butterworth Heinmann, London

8. Stevens Laurence, (1990). Guide to Starting and Operating Successful Travel Agency, Delmar Publishers Inc., New York.

9. Chand, Mohinder, Travel Agency Management, Anmol Publication

10. Seth, P. N., (1992), Successful Tourism Management Vol. 1 & 2, Sterling Publications, Delhi

11. Foster, Douglas (1983), Travel and Tourism Management, McMillan, London.

Course Outcomes:

1. To acquire the functions and contribution of travel agency and tour operators to tourism sector.
2. To enhance the knowledge of tour operations business and its process.
3. To acquire the background knowledge of travel formalities.
4. To enhance the knowledge of transport system in linkage with tourism aspects.

To acquire the background knowledge of aviation management

Course Articulation Matrix - 20C4T4

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	-	2	3	2	1	1	1	-	2	2
CO2	2	2	2	1	1	-	2	-	2	3	2	1
CO3	2	1	2	3	-	2	1	2	-	2	2	2
CO4	2	2	3	-	2	3	1	1	2	1	-	3
CO5	2	1	2	1	2	-	-	2	-	1	1	-
WA	**2**	**1.4**	**2.25**	**1.75**	**2**	**2.33**	**1.25**	**1.5**	**1.66**	**1.75**	**1.75**	**2**

International Tourism

Nature	Area	Semester	
Elective-V	**Tourism & Travel Management**	**IV**	
CourseCode	**CourseName**	**Credit/Distributions**	
22C4T5	**International Tourism**	**(L-2:T-0:P-1)Credit=03**	
		C1+C2	**30Marks**
		C3	**70Marks**

Learning Objectives:

1. To study the Tourism resources of India.
2. To understand the Tourism resources of North America and South America.
3. To know the tourism resources of Europe, Africa, Middle East, Asia and

Australia.

Unit 1 **12 hrs**

A) **Concept of International Tourism** - Challenges-Factors Affecting Global and Regional Tourist Movement-Contemporary Trends in International Tourist Movements-IATA Areas.

B) **Tourism Resources of India-**Art Forms**-**Paintings, Museums, Art Galleries -Manmade Attractions-Archaeological Sites, Forts and Palaces. – Natural Attractions-Land Forms, Landscapes, Mountains, Water Bodies, Deserts, Islands, Wildlife Sanctuaries, National Parks, and Tourism Attractions - Cultural Attractions, Fairs and Festivals, Dance Forms, Handicrafts and Music.

Unit II 07 hrs

Tourism Resources of North and South America-USA-Canada-Mexico-Caribbean Islands-Brazil and Argentina.

Unit III 07 hrs

Tourism Resources of Africa and Middle East- South Africa-Egypt-Kenya –Seychelles-Mauritius-U.A.E-Saudi Arabia.

Unit IV 07 hrs

Tourism Resources of Europe: Scandinavia **-**Italy-France-Germany-United Kingdom-Spain-Switzerland- Austria-Poland –Greece.

Unit V 07 hrs

Tourism Resources of Asia and Australia- China-Japan- Hongkong- Singapore-Malaysia-Thailand- Indonesia- Australia –New Zeland.

Books for References:

1) Travel Geography, Burton and Rosemary Longmen Edn. 1999s.

2) Worldwide destination, Geography of Travel and Tourism by Cooper, Chris and Bomifade.

3) Geography of Travel and Tourism, Hudson, Lyods and Jackson,Delmar Publishers 1999.

4) International destinations by Perlitz, Lee and Elliots, Prentic Hall Edn. 2001.

5) World Geography – By Majid Hussain

6) Heritage and Cultural tourism – Romila chawla

7) Tourism products - Robinet Jacob, Sindhu, Mahadevan

8) Cultural tourism - Harish Badan

Learning Outcomes:

1. To acquire the knowledge of tourism resources of India.
2. To enhance the knowledge of the tourism resources of North America and South America.
3. To enhance the knowledge of the tourism resources of Africa, Middle East
4. To enhance the knowledge of the tourism resources of Europe

To enhance the knowledge of the tourism resources of Asia and Australia

Course Articulation Matrix - 20C4T5

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	3	-	2	-	2	-	1	1	3
CO2	2	1	-	3	-	2	2	1	1	-	2	2
CO3	2	3	2	1	1	-	2	1	2	1	2	-
CO4	2	3	1	-	2	3	1	-	3	2	-	1
CO5	2	-	2	3	-	2	-	2	1	1	1	1
WA	**2**	**2**	**1.75**	**2.5**	**1.5**	**2.25**	**1.6**	**1.5**	**1.75**	**1.25**	**1.5**	**1.75**

TOURISM PLANNING AND DEVELOPMENT

Nature	Area	Semester	
Elective -VI	**Tourism & Travel Management**	**IV**	
Course Code	**Course Name**	**Credit/Distributions**	
22C4T6	**Tourism Planning and Development**	**(L-2:T-1:P-0) Credit = 03**	
		C1 + C2	**30 Marks**
		C3	**70 Marks**

Course Objectives:

1. To understand the tourism planning in destination management and development.
2. To know the institutional support in tourism destination development.
3. To study the concept of sustainable tourism planning and development.

Unit I

08 hrs

Tourism Planning: Common Features of Tourist Destinations – Components of Destination Amalgam. –Essential Facilities and Services For Tourism Development- Conceptual Meaning Of Tourism Planning- Destination Planning Process And Analysis – Types -Levels of Tourism Planning - Assessment of Tourism Potential of A Destination.

Unit II **08 hrs**

Tourism Destination Image Development - Attributes of Destinations: Pearson's Determined Image, Measurement of Destination Image – Tourism Destination Branding Perspectives and Challenges-Creating the Unique Tourism Destination Proposition – Tourism Destination Image Formation Process; Unstructured Image - Product Development and Packaging - Destination Branding and the Web-Case Study.

Unit III **06 hrs**

Tourism Destination Promotion and Publicity - Ten 'A's Framework for Tourism Destinations -Destination Marketing Mix - Destination Competitiveness – Distribution Channels- Marketing Communication and Strategies - Role of DMO's in Destination Marketing Strategies.

Unit IV **10 hrs**

Institutional Support: Public Private Partnership (PPP) - National Planning Policies for Destination Development- WTO Guidelines for Planners -Characteristics of Rural Tourism Plan - Environmental Management Systems – Destination Vision- The Focus of Tourism Policy: The Competitive Sustainable Tourism Destination. (Destination Mapping- Practical Assignment).

Unit V **08 hrs**

Sustainable Tourism: Definition – Forces Which Promote Sustainable Tourism – Economic Forces Which Resist– Principles– Carrying Capacity–Forms - Planning For Sustainable Tourism Development-Environmental Impact Assessment.

Books for Reference:

1. Nigel Morgan, Annette Pritchard & Roger Pride (2001), Destination Branding: Creating the Unique Proposition, Butterworth and Heinemann.
2. Richard W. Butler (2006), The Tourism Area Life Cycle: Applications And Modifications, Channel View Publications. Praveen Seth-Successful tourism planning and Management, Cross-section Publications.
3. Dash M.C. (1993) fundamentals of Ecology (New Delhi), Tata McGraw Hill Co. Ltd., Publishing Co. Ltd.)
4. Eagles P.F.J. 1987. The Planning and Management of Environmentally sensitive areas. (U.S., A. Lengman).

Course Outcomes:

1. To acquire the theoretical background of tourism planning, destination development.
2. To enhance the concepts related to the institutional support in tourism destination image development.
3. To acquire the knowledge of tourism destination promotion and publicity
4. To enhance the concepts related to institutional support, PPP, National, WTO, rural and environmental management.
5. To acquire the knowledge ofthe concept of sustainable tourism planning and development

Course Articulation Matrix - 20C4T6

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	-	3	-	2	1	-	2	1	3
CO2	2	1	1	2	-	3	2	2	-	1	2	2
CO3	2	3	1	2	1	2	-	1	2	1	-	2
CO4	2	1	2	-	3	2	1	-	2	-	1	-
CO5	2	1	-	2	1	1	3	2	2	1	2	1
WA	**2**	**1.4**	**1.5**	**2**	**2**	**2**	**2**	**1.5**	**2**	**1.25**	**1.5**	**2**

MEETING, INCENTIVE, CONFERENCE AND EXHIBITION (MICE) TOURISM

Nature	Area	Semester	
Elective -VII	**Tourism & Travel Management**	**IV**	
Course Code	**Course Name**	**Credit/Distributions**	
22C4T7	**MEETING, INCENTIVE, CONFERENCE AND EXPOSITION (MICE) TOURISM**	**(L-2:T-1:P-0) Credit = 03**	
		C1 + C2	**30 Marks**
		C3	**70 Marks**

Cource Objectives:

1. To know about event management, MICE industry and its contribution to tourism sector
2. To understand the techniques and strategies for organizing successful meeting, conference, trade fair and incentive tour
3. To acquire the knowledge of competencies to market and promote MICE tourism

Unit 1 **10 Hrs**

Introduction to Event Management: Meaning- Characteristics, Size and Type of Events, Event Team, Code of Ethics, Stakeholders in the Industry - Five C's of Event Management

–Nature, Scope, Significance and Trends of Event Business - Roles and Functions of Technical Staff and Event Manager - Purpose of Event, Developing Theme of the Event, Venue Selection, Participants, Financial, Date and Time Factors, Sponsors - Designing the Layout, Decoration, Technical Equipment, Catering Services, Logistical Elements, Feasibility, Legal Issues.

Unit II **08 Hrs**

MICE and Professional Meeting Planning: Meaning, Nature, Scope and Importance of MICE Tourism - Sectors Involved in MICE (Hotel, Transportation, Attractions) – Planning Process - Economic and Social Significance of MICE-Professional Meeting Planning:Meaning, Types and Roles, Associate, Corporate and Independent Meeting Planners -Travel Agents and Tour Operators as Meeting Planners - Responsibilities/Role of Meeting Planners – Current Meeting Technologies.

Unit III **07 Hrs**

Conference/Convention and Events Venues: Concept and Types-Conference Venues-Facilities, Check-Inand Check-Out Procedures, Requirements; Conference Room Lay-Outs; Conventions-Meaning, Significance and Process, Convention Manager -Convention Visitor Bureaus – Functions, Structure and Funding Sources, Conference Facilities in India - Role and Functions of ICPB and ICCA.

Unit IV **08 Hrs**

Trade Shows and Exhibitions/Expositions: Types of Shows, Benefits of Exhibitions, Participant Decision Making Process, Contract Negotiations – Principles, Steps, Negotiation with Hotels, Airlines and Groundhandlers. Case Studies: Tourism Festivals – Ellora Festival, Taj Festival, Khajuraho Festival, Dasara Festival, Hampi Festival - Trade Fairs: World Travel Mart ITB, TTW, PTM and TTF.

Unit V **07 Hrs**

Incentive Tour and Marketing, Promotion of MICE: Concepts, Trends, Growth and Characteristics - Organizing and Special Requirements/Checklists - Nature of MICE Markets - Demand, Segmentation, Targeting and Positioning Techniques, Marketing Channels, Process of MICE E-Marketing, SWOT Analysis, DMO's and DMC's and their Role in Promotion of the Destination.

BOOKS FOR REFERENCE:

1. Event Planning Ethics and Etiquette: A Principled Approach to the Business – Judy Allen

2. Event Planning –Judy Allen

3. Meeting Spectrum – Rudi .R Right

4. Meeting Conventions and exposition and introduction to industry – Rhoda J. Montgomery

5. Global Meetings and Exhibition - Carol Krugman and Rude R.Wright

Practical Components:

1. Identify 5 major companies in service sectors that have generated employment opportunities in India
2. Visit 2 Car dealers and gather information on expectations and satisfaction from customers about recently introduced car
3. Visit a major Hospital and gather data to analyze the service gap experience by the patients

Reference Books

1. Services Marketing – Integrated Customer Focus Across The Firm – Valarie A. Zeithaml and M. J. Bitner
2. Services Marketing – People, Technology and Strategy – Lovelock
3. Services Marketing – Ravishankar
4. Marketing of Services – Jha
5. Marketing of Services – G.S. Bhatia
6. Marketing of Services – Sahu and Sinha

Course Outcomes:

1. To acquire the knowledge of event managementits contribution to tourism sector
2. To enhance the knowledge of event planning
3. To acquire the theoretical background of conference and conventions requirements and functionalities
4. To acquire the theoretical background of trade show and exhibitions requirements and functionalities
5. To acquire the knowledge of incentives, competencies to market and promote MICE tourism

Course Articulation Matrix - 20C4T7

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	2	2	-	-	1	1	3	-	1
CO2	2	2	-	1	2	3	2	-	1	1	2	3
CO3	2	1	1	2	-	2	-	1	1	2	-	1
CO4	2	2	3	-	2	-	1	1	2	3	2	2
CO5	2	1	1	2	-	2	-	2	-	2	3	1
WA	**2**	**1.4**	**1.75**	**1.75**	**2**	**2.3**	**1.5**	**1.25**	**1.25**	**2.2**	**2.3**	**1.6**

GUIDELINESFORBUSINESSFAMILIARIZATIONREPORT(BFR)

Nature	Area	Semester
Core	Business Familiarisation Report (BFR)	**III**
Course Code	**CourseName**	**Credit/Distributions**
22C303	**Business Familiarisation Report (BFR)**	**(L-0:T-0:P-2) Credit=02**

OBJECTIVE

To expose the students to the working culture of the organization and apply theoretical concepts of real life situation at the work place for various functions of the organization.

GENERAL GUIDELINES

Internship and Business Familiarization Report (BFR): In the be- ginning of the third semester, the students shall undertake team based internship in a business firm and prepare a Business Familiarization Re- port under the guidance of a faculty member. The report shall be submit- ted before the commencement of the third semester examinations failing which the student shall not be permitted to appear for the third semester examination. Business Familiarization guidance to twenty students is considered as equivalent to teaching of a course of two credits.

- ❖ Internship conducted in a year cannot be for a continuous period of more than 4 weeks in a given academic year.
- ❖ Internship undergone during academic classes shall not be considered
- ❖ Each students shall maintain internship dairy
- ❖ Certificates (Color Photocopy) of each internship shall be sub- mitted to the department along with the report

Details to mention on the Certificate:

- ❖ Students name and registration number
- ❖ Name of the institution/organization and duration of internship with date

EVALUATION: BFR will evaluated by the concerned guide for 50 marks through

internal valuation.

Viva-Voce / PRESENTATION: A viva-voce examination shall be conducted at the respective institution where a student is expected to give a presentation of his/ her work. The viva –voce examination will be conducted by the respective HOD or Senior Professor or internal Guideof the department and an external evaluator drawn from industry. Incase of non availability of industry professional, a senior professor or a faculty may be invited to conduct the viva-voce examination.

CONTENTS OF THE ORGANISATION STUDY REPORT

1. Cover page
2. Certificate from the Organization (scanned copy)
3. Certificate from the guide, HOD and Head of the Institution (scanned copy) indicating bonafide performance of Organisation study by the student.
4. Declaration by the student (scanned copy)
5. Acknowledgement
6. Table of contents
7. List of tables and graphs

EXECUTIVE SUMMARY

Chapter 1: Introduction about the Organization& Industry.

Chapter 2: Organization ProfileBack ground, Nature of business, Vision,Mission, Quality Policy Workflow model Product/service profile Ownership pattern Achievements/awards if any Future growth and prospects

Chapter 3: Mckensy's 7S framework and Porter's Five Force Model with special reference to Organization under study.

Chapter 4: SWOT Analysis

Chapter 5: Analysis of financial statements

Chapter 6: Learning experience.

BIBLIOGRAPHY

Annexure relevant to the Organization study such as figures, graphs, photographs, Financial statements etc.,

FORMAT OF THE ORGANIZATION STUDY:

Report shall beprepared using the word processor viz., MS Word, Times New Roman font sized 12, on a page layout of A4 size with 1" margin all sides (1.5" on left side due to binding) and 1.5line spacing. The Organization study re- port shall not exceed 60 pages.

OUTLAY OF THE REPORT

The chapters, sections and subsections may be numbered in the decimal form for e.g. Chapter2, sections as 2.1,2.2 etc., and subsections as 2.1.1,2.2.1 etc.,

Course Outcome

1. Linking the theory and practice by taking part in supervised and scheduled work

2. Students adjust themselves according to the professional environment by analyzing their working environment to the conceptual knowledge

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	3	2	3	2	3	3	3	2
CO2	2	3	2	3	3	2	2	2	2	2	3	3
Weighted Average	2.5	2.5	2	3	3	2	2.5	2	2.5	2.5	3	2.5

GUIDELINES FOR PROJECT

Nature	**Area**	**Semester**
Core	Project	**III**
Course Code	**CourseName**	**Credit/Distributions**
22C402	**Project**	**(L-0:T-0:P-6) Credit=06**

OBJECTIVE

To expose the students to understand the working of the organization/ company /industry and take up an in-depth study of an issue / problem in the area of specialization

CONTENTS OF THE PROJECT REPORT

1. Cover Title Page (Format Enclosed)
2. Inner Title page (same as title page)
3. Certificate from the guide, HOD and Head of the Institution (scanned copy) indicating bonafide performance of Project by the student
4. Certificate from the Organization (scanned copy if applicable)

5. Declaration by the student (scanned copy)
6. Acknowledgement
7. Table of contents
8. List of tables and graphs
9. Abbreviations/Operational definitions used.
10. Executive summary

EVALUATION: Each Final project report will be evaluated for 70 marks by internal and external examiners. The guide ordinarily shall be the internal examiner. A viva-voce on the project report for 30 markswill be conducted by a board of three members constituted by the Chairman, BOE from the approved list of examiners.

CHAPTERS

Chapter 1: Introduction

Introduction, Industry profile and company profile: Promoters, vision, Mission & Quality Policy. Products / services profile areas of operation, infrastructure facilities, competitors' information, SWOT Analysis, Future growth and prospects and Financial Statement

Chapter 2: Conceptual background and Literature review Theoretical background of the study, Literature review with research gap (with minimum 20 literature reviews)

Chapter 3: Research Design

Statement of the problem, Need for the study, Objectives, Scope of the study, Research methodology, Hypotheses, Limitations, Chapter scheme

Chapter 4: Analysis and Interpretation

Analysis and interpretation of the data- collected with relevant tables and graphs. Results obtained by the using statistical tools must be included

Chapter 5: Findings, Conclusion and Suggestions

Summary of findings, Conclusion and Suggestions / Recommendations

Bibliography

Annexure relevant to the project such as figures, graphs, photographs etc.

Appendix

This will include printed secondary data (only if it is very critical) and any questionnaires used for the study.

FORMATS FOR PROJECT REPORT AND EVALUATION

Format of Cover Page

Format of certificate by College/Institution or from both
Format of Declaration Page

Format of Contents

Format of List of Tables and Charts Format of Bibliography

Format for Internal Evaluation, External Evaluation and Viva – voce

FORMAT OF THE ORGANIZATION STUDY:

Report shall be prepared using the word processor viz., MS Word, Times New Roman font sized 12, on apage layout of A4 size with 1" margin all sides (1.5" on left side due to binding) and 1.5line spacing. TheOrganization study report shall not exceed 60 pages.

OUTLAY OF THE REPORT

The chapters, sections and subsections may be numbered in the decimal form for e.g. Chapter2, sections as 2.1,2.2 etc., and subsections as 2.1.1,2.2.1 etc.

Course Outcome

1. Improve students research and personal skills
2. Upgrade students experience of practical work there by enhancing professional growth and experience
3. Creating valuable employees and competent job applicants to the companies

Course Articulation Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	3	2	3	2	3	3	3	2
CO2	2	3	2	3	3	2	2	2	2	2	3	3
Weighted Average	1.67	1.67	1.33	2.00	2.00	1.33	1.67	1.33	1.67	1.67	2.00	1.67

SBRR Mahajana First Grade College (Autonomous), PG Wing

Pooja Bhagavat Memorial Mahajana Education Centre

KRS Road, Metagalli, Mysuru-570016.

DEPARTMENT OF MCA
2023-2024

MOTTO

Enter to Learn Depart to Serve

VISION

Build a Strong Research and Teaching Environment that Responds Swiftly to theChallenges of the 21st Century.

MISSION

1. To provide the highest quality education in Computer Science;
2. To perform research that advances the state-of-the-art in Computer Science;
3. To produce post graduates who are knowledgeable, articulate, principled, inno-vative, confident, and able to think critically;
4. To be engaged in local, State, and National issues to the benefit of both publicand the private sector; and
5. To maintain a diverse college community.

SBRR Mahajana First Grade College

(Autonomous), PG WingPooja Bhagavat

Memorial Mahajana Education Centre

KRS Road, Metagalli, Mysuru-570016

Master of Computer Application - Regulations

2023-2024

Preamble

Mahajana Post Graduate Centre is an exclusive PG wing of SBRR Mahajana First Grade College (Autonomous). The centre happens to be the largest PG Centre affiliated to University of Mysore.

It was established in July 2003 with the motto "Enter to Learn, Depart to Serve". The Centre is affiliated to University of Mysore and offers Post Graduation programmes in the areas of direct relevance and value to the current generation of students. The Centre offers Post Graduate degree in 12 disciplines and is poised to start new programmes in the years to come.

M.C.A. was started in the year 1999. It is a four semester full-time programme. The course is approved by University Grants Commission and affiliated to the University of Mysore. MCA programme is accredited by All India Council for Technical Education (AICTE).

1. Definitions

Course

Every course offered will have three components associated with the teaching-learning process of the course, namely

(i) Lecture – L (ii) Tutorial- T (iii) Practical - P, where

L stands Lecture session. **T** stands Tutorial session consisting participatory discussion/ self-study/ desk work/ brief seminar presentations by students and such other novel methods that make a student to absorb and assimilate more effectively the contents delivered in the Lecture classes.

P stands Practice session and it consists of Hands on experience / Laboratory Experiments / Field Studies / Case studies that equip students to acquire the much required skill component.

In terms of credits, every one hour session of L amounts to 1 credit per semester and aminimum of two hour session of T or P amounts to 1 credit per semester, over a period of one semester of 16 weeks for teaching-learning process. The total duration of a semester is 20 weeks inclusive of semester-end examination.

A course shall have either or all the three components. That means a course may have only lecture component, or only practical component or combination of any two or all the three components.

The total credits earned by a student at the end of the semester upon successfully completing the course are L + T + P. The credit pattern of the course is indicated as L: T: P.

If a course is of 4 credits then the different credit distribution patterns in

L: T: P format could be

4 : 0 : 0,	1 : 2 : 1,	1 : 1 : 2,	1 : 0 : 3,	1 : 3 : 0,
2 : 1 : 1,	2 : 2 : 0,	2 : 0 : 2,	3 : 1 : 0,	3 : 0 : 1,
0 : 2 : 2,	0 : 4 : 0,	0 : 0 : 4,	0 : 1 : 3,	0 : 3 : 1,

The concerned BoS will choose the convenient credit pattern for every course based on the requirement. However, generally, a course shall be of 3 or 4credits.

Different courses of study are labeled and defined as follows:

Core Course

A course which should compulsorily be studied by a candidate as a core requirements termed as a Core course.

A Core course may be a **Soft Core** if there is a choice or an option for the candidate to choose a course from a pool of courses from the main discipline /subject of study or from a sister/related discipline / subject which supports the main discipline / subject. In contrast to the phrase Soft Core, a compulsory core course is called a **Hard Core** Course.

Elective Course

Generally a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline / subject of study or which provides an extended scope or which enables an exposure to some other discipline / subject/domain or nurtures the candidate's proficiency/ skill is called an Elective Course. Elective courses may be offered by the main discipline/ subject of study or by sister / related discipline / subject of study. A Soft Core course may also be considered as an elective.

An elective course chosen generally from an unrelated discipline / subject, with an intention to seek exposure is called an **open elective**.

An elective course designed to acquire a special/advanced knowledge, such as supplement study/support study to a project work, and a candidate studies such a course on his own with an advisory support by a teacher is called a **Self Study.**

A core course offered in a discipline / subject may be treated as an elective by other discipline / subject and vice versa.

Project work/Dissertation work is a special course involving application of

knowledge in solving / analyzing /exploring a real life situation / difficult problem. A project work up to 4 credits is called Minor Project work. A project work of 6 to 8 credits is called Major Project Work. Dissertation work can be of 10-12 credits. A Project work/Dissertation work may be a hard core or a soft core as decided by the BoS concerned.

2. Eligibility for Admission

Candidates possessing a degree of University of Mysore, or of any other University, equivalent there to and complying with the eligibility criteria:

Passed BCA/ Bachelor Degree in Computer Science Engineering or equivalent Degree. **OR** Passed B.Sc./ B.Com./ B.A. with Mathematics at 10+2 Level or at Graduation Level (with additional bridge Courses as per the norms of the concerned University).

Admission to MCA course shall be open for candidates who have passed the Bachelor degree examinations with not less than 50% of the marks in the aggregate of all the years of the Degree examinations. However, in the case of candidates from Karnataka belonging to SC/ST and Category-I, the aggregate percentage of marks in the qualifying examinations shall not be less than 45%. Provided that for admission to MCA, the candidate shall have passed Bachelor Degree with not less than 50% of marks with Mathematics / Statistics / Computer Science / Computer Programming / Computer Application / Business Mathematics / Business Statisticsas one of the optional or electives at degree level. Provided further that in respect of candidates who have studied and passed one of the subjects specified in the first proviso in the Pre-university course with 50% of marks in that subject shall also be considered for admission.

However, in the case of candidates belonging to SC/ST and Category-I, 45% of marks in that subject shall also be considered for admission.

3. Scheme of Instructions

3.1 A Master's Degree program is of 4 semesters-two year's duration for regular candidates. A regular candidate can avail a maximum of 8 semesters – 4 years (in one stretch) to complete Master's Degree (including blank semesters, if any). Whenever a candidate opts for blank semester(s)/DROP in a course or in courses or is compelled to DROP a course or courses as per the provision of the regulation, he/she has to study the pre-vialing courses offered by the department as per the prevailing scheme, when he/she continues his/her study.

3.2 A candidate has to earn a minimum of 80 credits, for successful completion of a Master's degree with a distribution of credits for different courses as given in the following table.

Course Type	Credits
Hard Core	44
Soft Core	A minimum of 28, not exceeding 32
Open Elective	A minimum of 4, not exceeding 8

Every course including project work/Dissertation work, practical work, field work, seminar, self- study elective should be entitled as hard core or soft core or open elective by the BoS concerned.

3.3 A candidate can enroll for a maximum of 24 credits per semester with the approval of the concerned department.

4. Continuous Assessment, Earning of Credits and Award of Grades

The evaluation of the candidate shall be based on continuous assessment. The Structure for evaluation is as follows:

4.1 Assessment and evaluation processes happen in a continuous mode. However, for re- porting purposes, a semester is divided into 3 discrete components identified as C1, C2, and C3.

4.2 The performance of a candidate in a course will be assessed for a maximum of 100marks as explained below:

4.2.1 The first component (C1), of assessment is for 25 marks. This will be based on test/ assignment/seminar/quiz/group discussions. During the first half of the semester, the first 50% of the syllabus will be completed. This shall be consolidated during the 8thweek of the semester. Beyond 8th week, making changes in C1 is not permitted.

4.2.2 The second component (C2), of assessment is for 25 marks. This will be based on test/ assignment/seminar/quiz/group discussions. The continuous assessment and scores of second half of the semester will be consolidated during the 16th week of the semester. During the second half of the semester the remaining units in the course will be completed.

4.1.1 The outline for continuous assessment activities for Component-I (C1) andComponent-II (C2) will be proposed by the teacher(s) concerned before the commencement of the semester and will be discussed and decided in the respective Departmental Council. The students should be informed about the modalities well in advance. The evaluated courses/assignments during component I (C1) and component II (C2) of assessment are immediately returned to the candidates after obtaining acknowledgement in the register maintained by the concern teacher for this purpose.

4.2.3 During the 18th -20th week of the semester, a semester-end examination of 2 hours duration shall be conducted for each course. This forms the third/final component of assessment (C3) and the maximum marks for the final component will be 50.

4.2.4 In case of a course with only practical component a practical examination will be conducted with two examiners (one internal and one external).

A candidate will be assessed on the basis of:

a) Knowledge of relevant processes
b) Skills and operations involved
c) Results / products including calculation and reporting.

If external examiner does not turn up then both the examiners will be internal examiners. The duration for semester-end practical examination shall be decided by the departmental council.

4.2.5 Scheme of Valuation for Practical Examination:

The student is evaluated for 50 marks in C3 as per the following scheme:

There will be two questions. A candidate has to prepare procedure for both thequestions and execute any one of examiner's choice:

Procedure Development	:	10 x 2=20 Marks
Implementation	:	15 x 1=15 Marks
Viva	:	10 Marks
Record	:	05 Marks
Total	:	50 Marks

*For change of question = 5 Marks will be deducted per question.

4.2.6 If **X** is the marks scored by the candidate out of 50 in C3 in theory examination, if **Y** is the marks scored by the candidate out of 50 in C3 in Practical examination, andif **Z** is the marks scored by the candidate out of 50 in C3 for a course of (L=0):T:(P=0)type that is entirely tutorial based course, then the final marks
(M) in C3 is decided as per the following table.

L.T.P distribution	Find mark M in C3
L:T:P	$\frac{[(L+T)*X]+[(T+P)*Y]}{L+2T+P}$
L:(T=0):P	$\frac{(L*X)+(P*Y)}{L+P}$
L:T:(P=0)	X
L:(T=0):(P=0)	X
(L=0):T :P	Y
(L=0): (T=0):P	Y
(L=0): T:(P=0)	Z

4.2.7 The details of continuous assessment are summarized in the following table:

Component	Syllabus in a course	Weightage	Period of Continuous assessment
C1	First 50%	25%	First half of the semester To be consolidated by 8th week
C2	Remaining 50%	25%	Second half of the semester. To beconsolidated by 16th week
C3	Semester-end examination (All units of the course)	50%	To be completed during 18th-20th Week.
Final grades to be announced latest by 24th week			

4.2.8 A candidate's performance from all 3 components will be in terms of scores, and the sum of all three scores will be for a maximum of 100 marks (25 +25 + 50).

4.2.9 Finally, awarding the grades should be completed latest by 24th week of the semester.

4.3 Minor Project/Major Project/Dissertation Evaluation

Right from the initial stage of defining the problem, the candidate has to submit the progressreports periodically and also present his/her progress in the form of seminars

In addition to the regular discussion with the guide. Components of evaluation are as follows:

Component – I (C1): Periodic Progress and Progress Reports (25%)
Component – II (C2): Results of Work and Draft Report (25%)
Component– III (C3): Final Viva-voce and evaluation (50%).

The report evaluation is for 30% and Viva-voce examination is for 20%.

4.4 In case a candidate secures less than 30% in C1and C2 put together in a course, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course. In case a candidate's class attendance in a course is less than 75%, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course.

Teachers offering the courses will place the above details in the Department Council meeting during the last week of the semester, before the commencement of C3, and subsequently a notification pertaining to the above will be brought out by the Chairman of the Department before the commencement of C3 examination. A copy of this notification shall also be sent to the office of the Controller of Examinations.

4.5 In case a candidate secures less than 30% in C3, he/she may choose DROP/MAKEUP option.
In case a candidate secures more than or equal to 30% in C3, but his/her grade (G) = 4, as per section 4.7 below, then he/she may be declared to have been conditionally successful in this course, provided that such a benefit of conditional clearance based on G=4 shall not be availed for more than 8 credits for the entire programme of Master's Degree of two years.
A MAKE UP examination for odd semester courses will be conducted along with next regular odd semester examinations and for even semester courses along with a next regular even semester examinations. If a candidate is still unsuccessful, he/she may opt for DROP or again take up MAKE UP examination; however, not exceeding double the duration norm in one stretch from the date of joining the course.

4.6 A candidate has to re-register for the DROPPED course when the course is offered again by the department if it is a hard core course. The candidate may choose the same or an alternate core/elective in case the dropped course is soft core / elective course. A candidate who is said to have DROPPED project work/Dissertation has to re-register for the same

subsequently within the stipulated period. **The details of any dropped course will not appear in the grade card.**

4.7 The grade and the grade point earned by the candidate in the subject will be as given below.

Marks(M)	Grade	Grade Point (GP = V x G)
30-39	4	V*4
40-49	5	V*5
50-59	6	V*6
60-64	6.5	V*6.5
65-69	7	V*7
70-74	7.5	V*7.5
75-79	8	V*8
80-84	8.5	V*8.5
85-89	9	V*9
90-94	9.5	V*9.5
95-100	10	V*10

Here, **P** is the percentage of marks (P = [(C1+C2) +M] secured by a candidate in a course which is rounded to nearest integer. **V** is the credit value of course. **G** is the grade and GP is the grade point.

4.8 A candidate can withdraw any course within in ten days from the date of notification of final results. Whenever a candidate withdraws a paper, he/she has to register for the same course in case it is hard core course, the same course or an alternate course if it is soft core/open elective.
A DROPPED course is automatically considered as a course withdrawn.

4.9 Overall Cumulative Grade Point Average (CGPA) of a candidate after successful Completion the required number of credits (80) is given by:

CGPA = ΣGP / Total number of credits

5. Classification of Results

The final grade point (FGP) to be awarded to the student is based on CGPA secured by the candidate and is given as follows.

CGPA	Numerical Index	Qualitative Index
4 <= CGPA < 5	5	Second Class
5 <= CGPA < 6	6	
6 <= CGPA < 7	7	First Class
7 <= CGPA < 8	8	
8 <= CGPA < 9	9	Distinction
9 <= CGPA < 10	10	

Overall percentage = 10* CGPA or is said to be 50% in case CGPA < 5

6. Medium of Instruction

The medium of instruction shall be English. However, a candidate will be permitted to write the examinations in either English or Kannada. This rule is not applicable to languages.

7. Provision for Appeal

If a candidate is not satisfied with the evaluation of C1 and C2 components, he / she can approach the grievance cell with the written submission together with all facts, the assignments, and test papers etc., which were evaluated. He/she can do so before the commencement of semester- end examination. The grievance cell is empowered to revise the marks if the case is genuine andis also empowered to levy penalty as prescribed by the college on the candidate if his/her submission is found to be baseless and unduly motivated. This cell may recommend taking disciplinary/corrective action on an evaluator if he/she is found guilty. The decision taken by the grievance cell is final.

For every program there will be one grievance cell. The composition of the grievance cell is as follows.

1. The Controller of Examinations ex-officio Chairman / Convener
2. One senior faculty member (other than those concerned with the evaluation of the course concerned) drawn from the department/discipline and/or from the sister departments/sister disciplines.
3. One senior faculty member / course expert drawn from outside the department.

8. Any other issue not envisaged above, shall be resolved by the competent authority ofthe autonomous college, which shall be final and binding.

9. Any matter which is not covered under this regulation shall be resolved as per theCollege/Mysore University regulations.

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Programme Outcomes – M.C.A.

PO 1: Use emerging tools, techniques and skills necessary for computing in the real world.

PO 2: Identify, formulate and solve complex computing problems to achieve substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domains.

PO 3: Analyze problems, suggest appropriate solutions and justify propositions for effective decision making in the professional field.

PO 4: Develop strong critical thinking skills to assess why certain solutions might not work and to save time in coming up with the right approach in the field of computing.

PO 5: Create, select and apply appropriate techniques and latest Information Technology tools to forecast an outcome by utilizing data that is available.

PO 6: Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practices.

PO 7: Develop and imbibe the principles of ethics and values in profession.

PO 8: Communicate effectively and efficiently as an individual, and as a member, or leader topresent the technical knowledge in multi-disciplinary settings.

PO 9: Study and review literature, reports prepare documentation and make inferences to designbetter systems.

PO 10: Recognize and realize the need for, and develop an ability to engage in lifelong learning.

SBRR Mahajana First Grade College

(Autonomous), PG Wing

Pooja Bhagavat Memorial Mahajana Education Centre

KRS Road, Metagalli, Mysuru-570016

Master of Computer Application

Programme Structure &Syllabus

W.e.f. 2023-2024

List of Hard Core Courses

Sl. No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1	Mathematical Foundations for Computer Applications	4	0	0	4	23BH01
2	Advanced Computer Networks	3	1	0	4	23BH02
3	Data Structures and Algorithms	3	0	1	4	23BH03
4	Operating System	3	1	0	4	23BH04
5	Software Engineering	3	1	0	4	23BH05
6	Object Oriented Programming with Java	3	0	1	4	23BH06
7	Python Programming	3	0	1	4	23BH07
8	Web Technologies	2	1	1	4	23BH08
9	Dissertation Work	0	2	10	12	23BH09

List of Soft Core Courses

Sl. No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1	Data Communication and Networks	3	1	0	4	23BS01
2	Advanced Database Management System	3	0	1	4	23BS02
3	Cloud Computing	4	0	0	4	23BS03
4	System Analysis and Design	3	1	0	4	23BS04
5	Cryptography and Network Security	3	1	0	4	23BS05
6	Theory of Languages and Automata	3	0	1	4	23BS06
7	Probability and Statistics	3	1	0	4	23BS07
8	Fundamentals of Internet of Things	3	1	0	4	23BS08
9	Mobile Application Development with Android	3	0	1	4	23BS09
10	Linux Programming	3	0	1	4	23BS10
11	Information Retrieval	3	0	1	4	23BS11
12	Big Data Analytics	3	0	1	4	23BS12
13	Machine Learning using Python	3	0	1	4	23BS13
14	Advanced Java	3	0	1	4	23BS14
15	Management Information Systems	3	1	0	4	23BS15
16	Business Intelligence	3	1	0	4	23BS16
17	Entrepreneurship Development	3	1	0	4	23BS17
18	Communication Skills	3	1	0	4	23BS18
19	Professional Ethics and Human Values	3	1	0	4	23BS19
20	Cyber Security	3	1	0	4	23BS20
21	Simulation and Modeling	3	0	1	4	23BS21
22	Artificial Intelligence	3	1	0	4	23BS22
23	Research Methodology	3	1	0	4	23BS23
24	NPTEL MOOC COURSE (min. 08 weeks)	0	0	0	4	23BS24

List of Open Elective Courses

Sl. No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1	World Wide Web	3	1	0	4	23BE01
2	E-Commerce	3	1	0	4	23BE02
3	Office Automation	3	1	0	4	23BE03

Note: We follow latest Edition Textbooks as References.

HC MATHEMATICAL FOUNDATIONS FOR COMPUTER APPLICATIONS 4:0:0

Objectives:

- Understand various concepts of mathematical logic.
- Implement set operations and functions in programming languages.
- Develop the skills to implement algebraic structures.
- Develop the basic skills of graph theory and its applications.

Outcomes:

- Develop an ability to implement various techniques of mathematical logic.
- Capability to apply the concepts of set theory.
- Ability to enhance the knowledge of algebraic structures towards computer applications.
- Ability to correlate the concepts of graph theory in computer applications.

Unit I: Mathematical Logic:

Statements and Notations, Connectives, Well-formed Formulas, Tautologies, equivalence ofFormulas, Duality law, Normal Forms, The Predicate Calculus.

Unit II: Set Theory

Basic concepts, Some operations on Sets, Venn Diagrams, Cartesian Products, Relations and Ordering, Functions, Definition, Composition of functions, Inverse functions, Natural Numbers, Recursion, Recursion in Programming Languages.

Unit III: Algebraic Structures

Algebraic Systems, Examples and General Properties, Grammars and Languages, Polish Expressions and Their Compilation, Groups, Definitions and Examples, Subgroups and Homomorphism's.

Unit IV: Graph Theory

An Introductions to Graph Theory: Definitions and examples Sub graphs, Complements, and Graph Isomorphism, Vertex Degree: Euler Trails and Circuits.

Definitions, Properties and examples rooted trees, Trees and sorting. Weighted Trees and Prefix codes. Spanning trees- minimal spanning tree by Prim's and Krushkal's Algorithm.

References:

1. Discrete Mathematical Structures with Applications to Computer Science - Trembley, J.P.and Manohar, RTata McGraw Hill, New Delhi.
2. Discrete Mathematics and Its Applications - Keneth H. Rosen: Fifth Edition, McGraw-Hill.
3. Discrete and Combinatorial Mathematics, Ralph P. Grimaldi, 5th Edition, Pearson Education.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	3	3	2	1	1	1	1	1	2
CO 2	3	3	3	2	1	1	1	1	1	2
CO 3	3	3	3	2	2	1	1	1	1	1
CO 4	3	3	3	3	2	1	1	1	1	2
Weighted Average	3	3	3	2.25	1.5	1	1	1	1	1.75

1: Low, 2: Moderate, 3: High

HC ADVANCED COMPUTER NETWORKS 3:1:0

Objectives:

- To understand fundaments of Network hardware and software.
- To Teach the applications and services of Transport.
- To impart the structural mechanism of TCP/IP.
- To create the awareness on the concepts of IP Security.

Outcomes:

- To employ the mechanism of Reference models and TCP/IP.
- To understand the role of Transport Layer in computer networks.
- Employ the techniques of TCP/IP.
- Comprehend the internal working mechanism of IP Security.

Unit I: Introduction

Uses of Computer Networks, Network Hardware, Network Software, Reference Models- OSI, TCP/IP.

Unit II: Transport Layer

The Transport Service, Congestion Control, History of TCP/IP, TCP Applications and Services, Motivation for Performance Study of TCP/IP, TCP Performance, TCP/IP Fundamentals, TCP, UDP, IP, Performance Measurements of TCP/IP Networks.

Unit III: TCP/IP

TCP/IP Performance over Wireless Networks, Wireless Networks, Generic characteristics, Wireless Local Area Networks, Cellular Communications Networks, TCP Performance Issues over Wireless Links, Inappropriate Reduction of Congestion Window, Throughput Loss in WLANs, Throughput Loss in Cellular Communication Systems, Improving TCP Performance over Wireless Links, Splitting TCP Connections, Snooping TCP at Base Stations, Notifying the Causes of Packet Loss, Adding Selective Acknowledgments to TCP.

Unit IV: IP & System Security.

Overview, IP Security Policy, Encapsulating Security Payload, Combining Security Associations- Authentication plus Confidentiality, Basic Combinations of Security Associations, Malicious Software, Types, Viruses, Antivirus Approaches, Distributed denial of service (DDoS) attacks.

References:

1. Computer Networks, Andrew S Tanenbaum, David. J. Wetherall, Pearson Education.
2. High Performance TCP/IP: Networking Concepts, Issues, and Solutions, Mahbub Hassanand Raj Jain, IST Edition, PHI Learning.
3. Network Security Essentials: Applications and Standards, William Stallings, 4th Edition,Prentice Hall.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	2	2	2	1	1	1	1	2
CO 2	3	2	2	2	2	1	1	1	1	2
CO 3	2	2	2	2	1	2	1	1	1	2
CO 4	3	3	3	2	2	2	1	1	2	2
Weighted Average	2.75	2.25	2.25	2	1.75	1.5	1	1	1.25	1.5

1: Low, 2: Moderate, 3: High

HC DATA STRUCTURES AND ALGORITHMS 3:0:1

Objectives:

- Impart the basic concepts of data structures and algorithms.
- Understand concepts about searching and sorting techniques.
- Know the basic concepts about stacks, queues, lists, trees and graphs.
- To gain knowledge on trees and graphs concepts.

Outcomes:

- Analyze algorithms and algorithm correctness.
- Summarize searching and sorting techniques.
- Describe stack, queue and linked list operation.
- Solve the problems by writing algorithms using fundamental data structures.

Unit I: Basics of Data Structures and Algorithms

Introduction to Data Structures: Basic Data Types - Abstract Data Types; Structure, operations on them and Implementation. Introduction to Algorithms: Fundamentals of Algorithmic problem solving, Problem types - Analysis of Algorithm Efficiency: Analysis framework - Orders of growth, asymptotic notations and basic efficiency classes.

Unit II: Stacks, Queues and Lists

Arrays: Single and Two dimensional - Stacks: Array representation, Expression evaluation, recursion – Queues: Linear queue, priority queues (heap), Linked lists: Singly linked, doubly linked, Memory representation of lists

Unit III: Trees and Graphs

Trees: Basic Terminologies, Binary Trees and their memory representation, Binary Search Trees Graphs: Directed and Undirected graphs, Definitions, Representations, Weighted graphs, Traversalsand searching BFS and DFS.

Unit IV: Algorithm Design

Divide and Conquer: General method, Binary search, Merge sort, Quick sort, Greedy Method General Method, Knapsack Problem, Minimum-Cost Spanning Trees - Kruskal's and Prim's algorithm, Single-Source Shortest Path Problem, Dijkstra's algorithm, Dynamic Programming : General Method, All Pair Shortest Paths (Floyd-Warshall algorithm); Travelling Salesman Problems.

References:

1. Fundamentals of Computer Algorithms – Ellis Horowitz, SartajSahini,Sanguthevar Rajasekaran 2nd Edition, Computer Science Press.
2. Data Structures with C - Seymour LipschutzSchaum's Outline Series
3. Classical Data Structures – DebasisSamanta, 2nd Edition, PHI Learning Pvt.Ltd.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	3	3	2	1	1	1	1	1	3
CO 2	3	2	2	2	3	1	1	1	1	1
CO 3	3	2	2	2	2	1	1	1	1	1
CO 4	2	3	2	2	2	1	1	1	1	1
Weighted Average	2.5	2.5	2.25	2	2	1	1	1	1	1.5

1: Low, 2: Moderate, 3: High

HC OPERATING SYSTEM 3:1:0

Objectives

- Understand the fundamental principles of operating system, processes and theircommunication.
- Understand the concepts of process management.
- Understand the concepts of Memory Management.
- Know the concepts of file systems and the disk management in Operating Systems.

Outcomes

- Understand the usage of the operating system components and its services.
- Employ the concepts of process management.
- Employ the concepts of Memory Management
- Apply the file handling concepts in OS perspective.

Unit I:

Introduction -Computer System Organization – Computer system architecture – Operating system operations - Operating systems services-System calls- Types of system calls – Operating system structure. Processes-process concept- process scheduling-operation on processes. Threads – Overview, Multithreading models – Threading issues.

Unit II:

Process Scheduling - Scheduling criteria-Scheduling algorithms – Thread scheduling - Multiple- processor scheduling. Process Synchronization – Critical Section problem – Peterson's solution – Semaphores Classical problems of synchronization - critical regions – Introduction to Monitors.

Unit III:

Deadlocks – System model - Deadlock Characterization - Deadlock handling

- Deadlock Prevention - Deadlock avoidance - Deadlock Detection – Deadlock

Recovery. Memory Management – Swapping - Contiguous Memory allocation –

Segmentation Paging. Virtual Memory Management - Demand paging – Copy on write - Page Replacement - Thrashing.

Unit IV:

File System – File concept – Access methods – Directory structure – Directory and disk structure - File Systems structures - Directory Implementation - Allocation Methods - Free Space management.

Linux System – Linux history, Design Principles, Kernel modules.

References:

1. Operating Systems Concepts - Abraham Silberschatz Peter B Galvin, G.Gagne, 9th Edition,John Wiley & Sons.
2. Modern operating Systems-Andrew S.Tanenbaum, Third Edition, PHI Learning Pvt. Ltd.
3. Operating Systems: A Concept-based Approach - D M Dhamdhere, Second Edition, TataMcGraw-Hill Education.
4. Operating Systems-H M Deital, P J Deital and D R Choffnes3rd edition, Pearson Education.

5. Operating Systems: Internals and Design Principles-William Stallings, Seventh Edition,Prentice Hall.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	1	2	1	-	1	1	1	1	2	1
CO 2	-	3	1	2	1	1	1	1	2	1
CO 3	-	3	1	2	1	1	1	1	2	1
CO 4	1	3	1	2	1	1	1	1	2	1
Weighted Average	1	2.75	1	2	1	1	1	1	2	1

1: Low, 2: Moderate, 3: High

HC SOFTWARE ENGINEERING 3:1:0

Objectives

- Understand the importance of domain knowledge and its work around.
- Know the importance team work and stewardship.
- Analyze and implement solutions to complex problems involving computers.
- A solid understanding to the methods of Software Quality Assurance.

Outcomes

- Gain an understanding to work in one or more significant application domains.
- Develop an ability to work as an individual and as part of a multidisciplinary team todevelop and deliver quality software.
- Demonstrate an understanding of and apply the current theories, models, and techniques thatprovide a basis for the software lifecycle.
- Demonstrate an ability to ensure Software Quality Assurance.

Unit I: Software, Software Engineering and Process Models

The Nature of Software, The Unique Nature of WebApps, Software Engineering, The Software Process, Software Engineering Practice, Software Myths, Prescriptive Process Models.

Unit II: Agile Development

Agile process model, Agility and Cost of Change, Agile Process, Extreme Programming, User stories, Brief introduction to Scrum, Introduction to DevOps - DevOps and Agile, Minimum Viable Product - Application Deployment - Continuous Integration - Continuous Delivery.

Unit III: Requirements Modelling & Design

Requirements Analysis, Scenario – Based Modelling, UML Models that supplement the Use Case, Data Modelling Concepts, Requirements Modelling Strategies, Flow-oriented Modelling, Creating abehavioural model, Design concepts, Design Model.

Unit IV: Software Quality Assurance & Testing

Software Quality Assurance : Elements of Software Quality Assurance, SQA Tasks, Goals, Metrics,Formal Approaches to SQA,Statistical SQA, Software Reliability.

Software Testing : Verification & Validation, Software Testing Strategy—The Big Picture, Test strategies for conventional software, OO software and WebApps, Validation Testing, System testing, The Debugging process, White box testing, Black box testing.

References:

1. Software Engineering, A Practioner's Approach - Roger S Pressman, 7th Edition, McGrawHill Education Pvt. Limited.
2. Software Engineering - Ian Sommerville, 8th Edition, Pearson Education Ltd.
3. Fundamentals of software engineering - Rajib Mall, Phi learning Pvt. Ltd, 3rd edition.
4. The DevOps Handbook - by Gene Kim, Jez Humble, Patrick Debois, and Willis Willis.
5. What is DevOps? - by Mike Loukides.
6. The DevOps Handbook - by John Willis, Patrick Debois, Jez Humble, Gene Kim.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	1	2	2	2	1	2	1	3	2
CO 2	2	1	2	2	2	1	1	1	2	1
CO 3	2	2	3	2	3	1	1	1	2	1
CO 4	2	1	2	2	1	1	2	1	2	2
Weighted Average	2.25	1.25	2.25	2	2	1	1.5	1	2.25	1.5

1: Low, 2: Moderate, 3: High

HC OBJECT ORIENTED PROGRAMMING WITH JAVA 3:0:1

Objectives:

- Gain knowledge about basic of Java language syntax and semantics.
- Understand the fundamentals of object-oriented programming in Java, including defining classes, objects, invoking methods etc and exception handling mechanisms.
- Gain knowledge on multi-threads programming.

Outcomes:

- Use the syntax and semantics of java programming language and basic concepts of OOP.
- Apply the class fundamentals, arrays, inheritance and polymorphism to develop reusableprograms.
- Apply the concepts of packages, interfaces and exception handling to develop efficient anderror free codes.
- Build applications using the concepts of multithreading and files.

Unit – I

An Overview of Java: Object-Oriented Programming, A First Simple Program, A Second Short Program, Two Control Statements, Using Blocks of Code, Lexical Issues, The Java Class Libraries, Data Types, Variables, and Arrays: Java Is a Strongly Typed Language, The Primitive Types, Integers, Floating-Point Types, Characters, Booleans, A Closer Look at Literals, Variables, Type Conversion and Casting, Automatic Type Promotion in Expressions, Arrays, A Few Words About Strings.

Unit – II

Introducing Classes: Class Fundamentals, Declaring Objects, Assigning Object Reference Variables, Introducing Methods, Constructors, The this Keyword, Garbage Collection, The finalize() Method, A Stack Class, A Closer Look at Methods and Classes: Overloading Methods, Using Objects as Parameters, A Closer Look at Argument Passing, Returning Objects, Recursion, Introducing Access Control, Understanding static, Introducing final, Arrays Revisited, Inheritance: Inheritance Basics, Using super, Creating a Multilevel Hierarchy, Constructors, Method Overriding, Dynamic Method Dispatch, Using Abstract Classes, Using final with Inheritance.

Unit – III

Packages and Interfaces: Packages, Access Protection, Importing Packages, Interfaces, Exception Handling: Exception-Handling Fundamentals, Exception Types, Uncaught Exceptions, Using try and catch, Multiple catch Clauses, Nested try Statements, throw, throws, finally, Java's Built-in Exceptions, Creating Your Own Exception Subclasses, Chained Exceptions, Using Exceptions.

Unit – IV

Multithreaded Programming: The Java Thread Model, The Main Thread, Creating a Thread, Creating Multiple Threads, Using isAlive() and join(), Thread Priorities, Synchronization. I/O Basics, Reading Console Input, Writing Console Output, ThePrintWriter Class, Reading and Writing Files.

References

1. Herbert Schildt, Java 2, The Complete Reference, Tata McGrawHill.
2. E. Balaguruswamy, Programming with JAVA A Primer, McGrawHill Education. Pvt. Ltd.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	2	1	1	1	1	1	1	1
CO 2	3	2	3	3	1	1	1	1	1	1
CO 3	3	3	3	3	1	1	1	1	1	1
CO 4	3	2	1	1	1	1	1	1	1	1
Weighted Average	3	2.25	2.25	2	1	1	1	1	1	1

1: Low, 2: Moderate, 3: High

HC PYTHON PROGRAMMING 3:0:1

Objectives:

- Understand programming paradigms brought in by Python.
- To learn to use python for text processing, with a focus on Regular Expressions, List andDictionaries.
- To explore various modules and libraries to cover the landscape of Python programming.

Outcomes:

- Develop algorithmic solutions to simple computational problems.
- Read, write, execute by hand simple Python programs.
- Structure simple Python programs for solving problems.
- Decompose a Python program into functions.

Unit-1 INTRODUCTION TO PYTHON

Structure of Python Program, Branching and Looping, Functions, Lists, tuples, string functions, listcomprehensions.

Unit-2 SEQUENCE DATATYPES AND OBJECT-ORIENTED PROGRAMMING

Sets, Dictionaries, Classes: Classes and Instances, Inheritance, Exceptional Handling, Modules, Introduction to Regular Expressions using “re” module.

Unit-3 USING NUMPY & PANDAS

Basics of NumPy, Computation on NumPy, Aggregations, Computation on Arrays, Comparisons, NumPy’s Structured Array.

Introduction to Pandas Objects, Data indexing and Selection, Operating on Data in Pandas, Handling Missing Data, Combining Data Sets.

Unit-4 VISUALIZATION AND MATPLOTLIB

Basic functions of matplotlib-Simple Line Plot, Scatter Plot-Density and Contour Plots- Histograms, Binnings and Density-Customizing Plot Legends, Colour Bars-Three- Dimensional Plotting in Matplotlib

References:

1. The Python Tutorial : https://docs.python.org/3/tutorial/index.html
2. Python Data Science Handbook - Essential Tools for Working with Data, Jake VanderPlas ,O’Reily Media,Inc, 2016
3. An Introduction to Python and Computer Programming, Zhang.Y, SpringerPublications,2016
4. NumPy : https://numpy.org/
5. Pandas : https://pandas.pydata.org/
6. Matplotlib : https://matplotlib.org/
7. Core Python Applications Programming, 3rd Edition by Wesley J. Chun
8. Python, The complete Reference, Martin C. Brown, McGraw Hill Education.
9. Python in a Nutshell, A. Martelli, A. Ravenscroft, S. Holden, OREILLY.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	2	2	2	2	1	1	-	-	2
CO 2	2	2	2	2	2	1	1	-	-	1
CO 3	3	2	2	1	2	-	-	1	1	1
CO 4	3	2	2	2	2	-	-	-	-	1
Weighted Average	2.5	2	2	1.75	2	1	1	1	1	1.25

1: Low, 2: Moderate, 3: High

HC WEB TECHNOLOGIES 2:1:1

Objectives:

- To help students understand the basis of Internet and how communication happens over theWorld Wide Web.
- To help students understand the basic building blocks of web pages using HTML and CSS.
- To help students understand and use Java script and the Document Object Model.
- To help students understand the use of web frameworks and content management systems forcreating and managing websites faster and easier.

Outcomes:

- Develop an ability to implement HTML5 pages using fundamental tags.
- Able to develop style sheet using CSS for a given problem.
- Able to extend JavaScript to validate a form with event handler for a given problem.
- Able to develop websites using web frameworks and content management systems

Unit I

Introduction to Internet, WWW, Web Browsers, and Web Servers, URLs, MIME, HTTP, Security. Quick introduction to HTML5 : basic text formatting, presentation elements, phrase elements, lists, Tables – attributes, grouping elements, basic links, email link, Image, Audio, Video, image maps , Forms.

Unit II

Cascading Style Sheet : Introduction, Levels of Style Sheet and specification formats, embedded style sheet, External Style Sheet, inline Style Sheet, Box Model, selector forms, Class and ID method, DIV and SPAN tags, Inheritance with CSS.

Unit III

JavaScript: JavaScript in HTML, Language Basics – Variables, operators, statements, functions, Data type conversions, reference types, Document object Model : methods, HTML DOM Elements,changing HTML and CSS, Events and event handling, event listener, form validation. Browser Object Model : Window, screen, history, popup alert, timing, cookies.

Unit IV

Brief introduction to Web Frameworks, MVC pattern, Push-based vs. pull-based, Three-tier organization, Examples for General-purpose website frameworks. Brief introduction to Content Management System, Advantages of CMS, Examples of widely used CMS, Creation of a simple website using WordPress.

References:

1. Internet and World Wide Web: How to Program - Paul Deitel, Harvey Deitel, Abbey Deitel,5th Edition - 2018, Pearson Education.
2. HTML & CSS: The Complete Reference - Thomas Powell, 5th Edition – 2015, McGrawHill Education.
3. HTML 5 Black Book (Covers CSS3, JavaScript, XML, XHTML, AJAX, PHP, jQuery) - DTEditorial Services, 2nd Edition – 2016, Dreamtech Press.
4. Learning PHP, MySQL & JavaScript with j Query, CSS & HTML5 - Robin Nixon, 4thEdition – 2015, O'Reilly.
5. https://www.w3schools.com/
6. https://en.wikipedia.org/wiki/Web_framework
7. https://en.wikipedia.org/wiki/Content_management_system

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	2	3	2	2	2	1	2	2	1
CO2	3	3	3	3	3	2	1	2	2	1
CO3	3	3	3	3	3	2	1	2	2	2
CO4	3	3	3	3	3	3	1	2	3	3
Weighted Average	2.75	2.75	3	2.75	2.75	2.25	1	2	2.25	1.75

1: Low, 2: Moderate, 3: High

HC DISSERTATION WORK 0:2:10

Objectives:

- Able to design a computing system to meet desired needs within realistic constraints such assafety, security and applicability.
- An ability to conduct experiments, interpret data and provide well informed conclusions.
- An ability to select modern computing tools and techniques and use them with dexterity.

Outcomes:

- Develop basic algorithm steps as a solution to a real-life problem.
- Implement algorithms using latest tools that contribute to the software solution of the projectusing different tools.
- Analyse, interpret, test and validate experimental results.
- Develop research/technical report with enhanced writing/communication skills followingethical practices.

Students need to implement different kinds of problems using Java based Frameworks, Python, PHP, MYSQL, Cloud tools, IoT tools, Dot NET, CASE tools, Open source tools and Mobile application oriented tools, as well as data mining/machine learning tools and techniques.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	-	3	3	2	-	1	-	-	-	3
CO2	3	3	3	2	3	1	-	-	-	3
CO3	-	-	3	2	-	1	-	-	3	3
CO4	-	-	-	-	-	1	3	2	3	3
Weighted Average	3	3	3	2	3	1	3	2	3	3

1: Low, 2: Moderate, 3: High

SC DATA COMMUNICATION AND NETWORKS 3:1:0

Objectives:

- Understand the basics of data communication components.
- Learn the protocols of Data link layer.
- Understand different network layer services and routing protocols
- Know the different techniques involved transport layer and application layer

Outcomes:

- Understand and implement various types of transmissions in wired and wirelesscommunications
- Study and develop the aspects of communication channels of Data Link Layer.
- Understand Design & apply various routing protocols of the Networks Layer.
- Design applications using the protocols of Transport & application Layer.

Unit I: Data Communications

Components, Data Representation, Data Flow, Networks –Network Criteria and Network Models, OSI model, TCP/IP Protocol suite, Multiplexing, Transmission media-Guided and Unguided media.

Unit II: Data link layer

Introduction, Framing, Flow and error control, Protocols-Noiseless Channels and Noisy Channels, Multiple Access: Medium Access Sub Layer-ALOHA, CSMA/CD, Wired LAN – Ethernet, Wireless LAN – IEEE 802.11

Unit III: Network layer

Network Layer: Internet Protocol – IPv4, Ipv6, IPv4 addresses, IPv6 addresses, Transition from IPv4 to IPv6, Routing algorithms, Unicast Routing protocols-Internet Structure, Brief introduction toRIP, OSPF and BGP, Unicasting vs. Multicasting.

Unit IV: Transport Layer and Application Layer

Transport layer services- Process to process communication, Addressing, Transport layer protocols- Services, Port numbers, UDP and TCP, Application Layer: Client/Server Paradigm, Standard Applications : WWW and HTTP, FTP, Electronic Mail, TELNET, SSH, DNS, Introduction to P2P networks.

References:

1. Data Communications and Networking with TCPIP Protocol Suite - Behrouz A. Forouzan,6th Edition, McGraw Hill.
2. Computer Networks - Andrew S Tanenbaum, 5th Edition. Pearson Education, PHI.
3. Data communications and Computer Networks - P.C .Gupta, PHI.
4. An Engineering Approach to Computer Networks - S. Keshav, 2nd Edition, PearsonEducation.
5. Understanding communications and Networks, 3rd Edition, W.A. Shay, Cengage Learning.
6. Computer Networking: A Top-Down Approach Featuring the Internet - James F. Kurose &Keith W. Ross, 3rd Edition, Pearson Education.
7. Data and Computer Communication- William Stallings, Sixth Edition, Pearson Education.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	-	1	3	-	1	1	1	2	1	2
CO2	-	1	3	-	1	1	1	2	1	1
CO3	3	1	-	3	1	1	1	2	1	3
CO4	3	1	-	3	1	1	1	2	1	3
Weighted Average	3	1	3	3	1	1	1	2	1	2.25

1: Low, 2: Moderate, 3: High

SC ADVANCED DATABASE MANAGEMENT SYSTEM 3:0:1

Objectives:

- Learning data modelling using the entity-relationship and developing database designs.
- Understand the use of Structured Query Language (SQL) and learn SQL syntax.
- Apply normalization techniques to normalize the database.
- Understand how NoSQL databases are often more scalable and provide superiorperformance.

Outcomes:

- Determine the basic concepts, E-R Mapping and SQL basic commands.
- Demonstrate the techniques of SQL, FD and Normalization.
- Develop Indexing, ACID and Transaction.
- Describe NoSQL database and PostgreSQL.

Unit I

Levels of abstraction in a DBMS, structure of a DBMS, people who work with databases, entity, entity types, entity sets, attributes, keys, relationship sets, participation constraints, weak entities and Enhanced Entity Relationship Model - Relational Database Design by ER- and EER-to- Relational Mapping, Basic Retrieval Queries in SQL, INSERT, DELETE, and UPDATE Statements in SQL, Additional features of SQL.

Unit II

Data definition, constraints and schema changes in SQL, Joins in SQL, views in SQL, Aggregate Functions and Clauses. Informal design guidelines for relational schemas, functional dependencies & types, normal forms- first, second, third, boyce-codd, forth & fifth normal forms.

Unit III

Sequential file organization, heap file organization, clustered indexes primary and secondary indexes, hash based indexing and B+ tree-based indexing. ACID properties - consistency and isolation, atomicity and durability, transaction on schedules, concurrent execution of transactions, serializability, lock-based concurrency control, strict two phase locking.

Unit IV

Introduction to NoSQL Systems, CAP Theorem, Document-Based NOSQL Systems, NoSQL Key- Value Stores, Column-Based or Wide Column NOSQL Systems. A brief introduction on PostgreSQL.

References

1. Fundamentals of Database Systems by Navathe and Elmasri –Pearson Education, FifthEdition.
2. Database Systems Concepts, 3rd edition by Abraham Silberschatz, Henry Korth and S.Sudarshan, Tata McGraw Hill.
3. Principles of database systems by Ullman, Computer Science press.
4. DBMS by Prof. S.Nandagopalan, 7th Revised Edition.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	2	2	2	1	1	-	1	-	-	-
CO 2	2	3	3	2	1	1	1	-	-	.
CO 3	3	3	3	2	2	1	1	1	1	1
CO 4	2	3	2	2	3	2	1	-	1	2
Weighted Average	2.25	2.75	2.5	1.75	1.75	1.33	1	1	1	1.5

1: Low, 2: Moderate, 3: High

SC CLOUD COMPUTING 4:0:0

Objectives:

- Ability to understand various basic concepts related to Cloud Computing technologies.
- Demonstrate the architecture and concept of different cloud models: IaaS, PaaS, SaaS
- Learn cloud services for individuals.
- Understand the technologies for data security in cloud.

Outcomes:

- Demonstrate the main concepts, key technologies, strengths, and limitations of cloudcomputing and the possible applications.
- Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS,public cloud, private cloud.
- Identify the cloud services for the individuals
- Acquire the knowledge on the core issues of cloud computing such as security, privacy, andinteroperability.

Unit I:

Introduction: Cloud Computing in a Nutshell, Layers and Types of Clouds, Desired Features of Cloud, Cloud Infrastructure Management, Challenges and Risks. Migrating into a Cloud- The Seven-Step Model of Migration into a Cloud.

Unit II:

Software as a Service (SaaS): Evolution of SaaS, Challenges of SaaS Paradigm, New Integration Scenarios, SaaS Integration of Products and Platforms, SaaS Integration Services, Business – to Business Integration Services.

Infrastructure As a Services (IaaS): Introduction, Background & Related Work, Virtual Machines Provisioning and Manageability, Virtual Machine Migration Services, Provisioning in a Cloud Context- Amazon Elastic Computer Cloud, Aneka.

Platform As a service (PaaS): Aneka Cloud Platform, Hybrid Cloud Implementation, Aneka HybridCloud Architecture.

Unit III:

The Enterprise Cloud Computing Paradigm- Background, Business Drivers Toward a Marketplace for Enterprise Cloud Computing, The Cloud Supply Chain.

Unit IV:

Data Security in the Cloud- Introduction, Current State, Cloud Computing and Identity, The Cloud, Digital Identity, and Data Security. Cloud Data Security – Case Study.

References:

1. Cloud Computing: Principles and Paradigms - RajkumarBuyya, James Broberg,Andrzej MGoscinski, Wiley publication.
2. Cloud Computing: A Practical Approach - Toby Velte, Anthony Velte, McGraw-HillOsborne Media.
3. Cloud Application Architectures: Building Applications and Infrastructure in the Cloud -George Reese, O'Reilly Publication.
4. Cloud Computing Explained: Implementation Handbook for Enterprises - John Rhoton,Recursive Press.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	-	1	2	3	3	2	3	3	3
CO2	2	-	1	2	2	3	2	2	2	2
CO3	2	1	1	1	2	1	1	2	2	2
CO4	1	-	2	3	2	1	1	2	-	1
Weighted Average	1.75	1	1.25	2	2.25	2	1.5	2.25	2.33	2

1: Low, 2: Moderate, 3: High

SC SYSTEM ANALYSIS AND DESIGN 3:1:0

Objectives:

- Understand the basics of system concepts and learn the feasibility study of the system.
- Learn the data analysis of a new system and tools associated in structured analysis.
- Understand the concepts of system testing and standards related to Documentation andmanagement
- Understand the concepts of system security and recovery management

Outcomes:

- Gather data for analysis and specify the requirements of a system.
- Design system components and environments.
- Build general and detailed models that assist programmers in implementing a system.
- Design a user interface for data input and output, as well as controls to protect the system andits data.

Unit I:

System Concept: Definition, Characteristics, Elements of system, Physical and abstract system, open & closed system and man-made information systems.

System Development Life Cycle: Various phases of system development, Considerations for systemplanning and control for system success.

Initial Investigation: Determining user's requirements and analysis, fact finding process and techniques.

Feasibility study: Determination of feasibility study, Technical, Operational & Economic Feasibilities, System performance constraints, identification of system objectives and feasibility report.

Unit II:

Cost/Benefit Analysis: Data analysis cost and benefit analysis of a new system and categories determination.

Tools of structured Analysis: Logical and Physical models, context, diagram, data dictionary, data diagram, IPO and HIPO charts, Gantt charts and pseudo codes. Flow charts- system flow chart, run flow charts etc., decision tree and decision tables.

Unit III:

Input/ Output and Form Design: Input and output form design methodologies, menu, screen designand layout consideration.

Management standards: Programming and operating standards.Documentation standards:

User and programming manual.

System testing & quality: System testing, quality assurance and software maintenance.

Unit IV:

System security: Data Security, Disaster/ recovery and ethics in system development.

Organization of EDP: Introduction, Job Responsibilities & duties of EDP Personnel- EDP manager, System Analyst, Programmers, Operators etc. Selection of Data Processing Resources: purchase, lease, rent-advantages and disadvantages.

References:

1. System Analysis and Design- Awad, Elias M- 2nd Edition, Galgotia Publication Pvt.Ltd.
2. System Analysis & Design - V K Jain, Dreamtech Press
3. Modern System Analysis &Design - A Hoffer, F George, S Valaciah Low Priced Edition,Pearson Education.
4. Information Technology & Computer Applications -V.K.Kapoor, Sultan Chand & Sons,New Delhi.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	1	3	1	1	1	1	-	3	-
CO2	3	1	3	1	1	1	1	3	3	-
CO3	3	1	3	1	1	1	1	3	3	3
CO4	3	1	3	1	1	1	1	3	3	3
Weighted Average	3	1	3	1	1	1	1	3	3	3

1: Low, 2: Moderate, 3: High

SC CRYPTOGRAPHY AND NETWORK SECURITY 3:1:0

Objectives:

- Understand the principles Computer Security.
- Learn conventional cryptosystem.
- Know public key cryptosystem
- Have a detailed knowledge about authentication, hash functions and application level securitymechanisms.

Outcomes:

- Implement the principles and practices of cryptographic techniques.
- Build simple cryptosystems by applying encryption algorithms.
- Comprehend secure identity management (authentication), message authentication, anddigital signature techniques.
- Employ the authentication protocol and web security methods.

Unit I: Computer Security Concepts and Classical Encryption Techniques

Introduction-computer security concepts, attacks, security services, security mechanisms; Classical encryption techniques-symmetric cipher models, substitution techniques, transposition techniques, rotor machines

Unit II: Block Ciphers-DES and Introduction to Public Key Cryptography

Symmetric ciphers-Block cipher principles; DES-Algorithm, strengths and weaknesses of DES, attacks on DES and defense, multiple encryptions; Asymmetric ciphers-Essential mathematics, public key cryptography,

Unit III: RSA, MAC and Digital Signatures

RSA, Diffie Hellman key exchange, random number generation, Data integrity and authentication Hash functions; MAC; Digital signatures;

Unit IV: Key Management, Authentication and System Security

Key management; Authentication, Web and system security, Web security; IP security; E mail security; System security-intruders, malicious software, firewalls

References:

1. Cryptography and Network Security -Principles and Practice - William Stallings,PEARSON.
2. Cryptography and Network Security -AtulKahate, Tata McGraw Hill.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	3	3	3	3	3	2	-	1	2	3
CO2	3	3	3	3	3	2	-	1	2	3
CO3	3	2	3	3	3	2	1	1	2	3
CO4	3	2	3	3	3	3	1	1	2	3
Weighted Average	3	2.5	3	3	3	2.25	1	1	2	3

1: Low, 2: Moderate, 3: High

SC THEORY OF LANGUAGES AND AUTOMATA 3:0:1

Objectives:

- Introduce concepts in automata theory and theory of computation.
- Identify different formal language classes and their relationships.
- Design grammars and recognizers for different formal languages.
- Prove or disprove theorems in automata theory using its properties.

Outcomes:

- Acquire a fundamental understanding of the core concepts in automata theory and formallanguages.
- Design grammars and automata (recognizers) for different language classes.
- Identify formal language classes and prove language membership properties.
- Prove and disprove theorems establishing key properties of formal languages and automata.

Unit I:

Brief introduction to Formal Proof: Deductive Proofs, Poving equivalences about sets, the contrapositive, Proof by contradiction, Counterexamples, Central concepts of automata theory: Alphabets, strings, languages.

Finite Automata: Deterministic Finite Automata, Nondeterministic Finite Automata, Equivalence ofDFA and NFA, Finite Automata with Epsilon transitions.

Unit II:

Regular Expressions, Finite Automata and Regular Expressions: Converting DFAs to regular expressions by eliminating states, converting regular expressions to automata, Applications of regular expressions, Brief overview of algebraic laws of regular expressions.

Properties of Regular Languages: The pumping lemma for regular languages, Applications of the pumping lemma, Closure properties and decision properties of regular languages (proofs not necessary), Minimization of DFAs

Unit III:

Context-Free Grammars, Parse Trees, Applications of context-free grammars, Ambiguity ingrammars and languages.

Pushdown Automata : Definition, Languages of a PDA, Equivalence of PDAs and CFGs,Deterministic Pushdown Automata.

Normal Forms for Context-free grammars

Unit IV:

The pumping lemma for context-free languages, Closure properties of context-free languages (proofs not necessary).

Brief introduction to Turing Machine: Notation for Turing Machine, Instantaneous descriptions for Turing Machines, Transition Diagrams for Turing Machine. Definition of Post's Correspondence Problem.

References:

1. Introduction to Automata Theory, Languages and Computation - Hopcroft J. E andUllman,J.D, Narosa Publishing House, Delhi.
2. Introduction to Languages and Theory of Computation, -John C Martin3rd edition. TMHPublication.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	2	3	3	3	1	1	1	1	2	2
CO2	2	3	3	3	1	1	1	1	1	2
CO3	2	3	3	3	1	1	1	1	1	2
CO4	2	3	3	3	1	1	1	1	1	2
Weighted Average	2	3	3	3	1	1	1	1	1.25	2

1: Low, 2: Moderate, 3: High

SC PROBABILITY AND STATISTICS 3:1:0

Objectives:

- Extend and formalize knowledge of the theory of probability and random variables.
- Introduce new techniques for carrying out probability calculations and identifying probabilitydistributions.
- Understand the concepts and techniques in Mathematical Expectation.
- Understand the Statistical hypotheses and its significance.

Outcomes:

- Apply axioms and theorems to describe events and compute probabilities also identify the types of random variables and calculate relevant probabilities.
- Analyse the different Techniques in Continuous Probability Distribution.
- Describe an appropriate statistical model for the given data and compute populationparameters using appropriate estimators.
- Describe the Tests of Hypotheses, Types of errors, test for Significance, regression andcurve fitting

Unit I:

Probability: The concept of probability, the axioms and theorems, conditional probability, Independent Event's, Bayes Theorem. Random Variables and Probability Distributions:

Random variables, discrete probability distributions and Distribution functions: Bernoulli, Binomial, Hyper Geometric, Geometric, Poisson, Uniform.

Unit II:

T joint Distributions, Independent random variables, Functions of random Variables. Mathematical Expectation: Definition, Functions of Random variables. The variance and Standard Deviation, Moments, Moment Generating Functions, Covariance, Correlation Coefficient.

Unit III:

Continuous Probability distribution and Distributions functions: Exponential, Normal, Uniform, Concepts of Chi square.

Unit IV:

SamplingTheory & Estimation: Population and sample, Random Sampling with and without replacement, the sample mean, sampling distribution of means, proportions, differences. The sample variance, the sample distribution of variances, Point estimates, Interval estimates. Variance analysis. Tests of Hypotheses and Significance: Statistical Decisions, Statistical hypotheses, Null Hypotheses, Tests of hypotheses and significance, Type I and Type II errors, level of significance, Tests involving the Normal distribution, One-Tailed and Two-tailed, Special tests of Significance for large and small samples, The Chi-square test for goodness of fit. Introduction to regression and curve fitting.

References:

1. Fundamentals of Statistics - S C Gupta and V K Kapoor.
2. Fundamentals of Statistics - S C Gupta.
3. Probability and Statistics with Reliability, Queuing and Computer Applications -Jusgir STrivedi, Prentice Hall of India.
4. Probability, Random Variables and Stochastic Processes - Papoulis and S. UnnikrishnaPillai,McGraw Hill, 4th Edition.
5. Probability and Statistics for Engineers- Richard A Johnson, Prentice Hall India.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	2	3	3	2	3	1	1	1	2	2
CO2	2	3	3	3	3	-	1	1	2	2
CO3	2	3	3	3	3	1	1	1	1	2
CO4	2	3	3	3	3	-	1	1	2	2
Weighted Average	2	3	3	2.75	3	1	1	1	1.75	2

1: Low, 2: Moderate, 3: High

SC FUNDAMENTALS OF INTERNET OF THINGS 3:1:0

Objectives:

- Learn the impact of IoT applications and architectures in real world.
- Illustrate the various methods of deploying smart objects and connect them to network.
- Infer the role of IoT in Industry.
- Understand the role of IoT in Smart and Connected Cities and Public Safety.

Outcomes:

- Interpret the impact of IoT networks in new architectural models.
- Compare and contrast the deployment of smart objects and technologies to connect them asnetwork.
- Elaborate the need of IoT Access Technologies.
- Identify the application of IoT in Smart and Connected Cities and Public Safety.

Unit I: Basics of IoT

Introduction to IoT, Genesis of IoT, IoT and Digitization, IoT Impact, Convergence of IT and OT, IoT Challenges, IoT Network Architecture and Design, Drivers Behind New Network Architectures, A Simplified IoT Architecture, The Core IoT Functional Stack.

Unit II: Smart Objects and Access Technologies

Smart Objects: The "Things" in IoT, Sensors, Actuators, and Smart Objects, Sensor Networks, Connecting Smart Objects, Communications Criteria, IoT Access Technologies (Any Three)

Unit III: IoT in Industry

IoT in Industry: Smart and Connected Cities-An IoT Strategy for Smarter Cities, Smart City IoT Architecture, Smart City Security Architecture, Smart City Use-Case Examples-Smart Traffic Control.

Unit IV: Public Safety

Overview of Public safety, An IoT Blueprint for public safety, Emergency Response IoT Architecture, IoT Public Safety Information Processing.

References:

1. IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things- David Hanes, Gonzalo Salgueiro, Patrick Grossetete, Robert Barton, Jerome Henry, 1st Edition, Pearson Education.
2. Internet of Things- Srinivasa K G, CENGAGE Leaning India.
3. Internet of Things (A Hands-on-Approach)-Vijay Madisetti and ArshdeepBahga, 1stEdition, VPT.
4. Internet of Things: Architecture and Design Principles - Raj Kamal,1stEdition, McGraw HillEducation.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	3	2	2	2	1	-	-	2	2
CO 2	2	2	2	2	2	1	-	-	2	2
CO 3	3	3	3	2	2	1	-	-	2	2
CO 4	2	3	2	1	2	1	1	1	2	2
Weighted Average	2.5	2.75	2.25	1.75	2	1	1	1	2	2

1: Low, 2: Moderate, 3: High

SC MOBILE APPLICATION DEVELOPMENT WITH ANDROID 3:0:1

Objectives:

- Learn to build simple android applications.
- Get an understanding of essentials of application design and user interface design.
- Understand different android APIs used to store and manage the data through SQLite.
- Understanding different android networking and web APIs to share the data between theapplications.

Outcomes:

- Build sample android application.
- Develop user interfaces for android applications.
- Develop android applications to share data between different applications.
- Deploy android applications.

Unit I: Introduction to Android

History of Mobile Software Development, Open Handset Alliance, Android Platform Android SDK, Building a sample Android application, Anatomy of Android applications, Android terminologies.

Unit II: Android Application Design Essentials

Application Context, Activities, Services, Intents, Receiving and Broadcasting Intents, Android Manifest File and its common settings , Using Intent Filter, Permissions , Managing Application resources in a hierarchy , Working with different types of resources.

Unit III: Android User Interface Design Essentials

User Interface Screen elements, Designing User Interfaces with Layouts, Drawing and Working with Animation.

Unit IV: Using Android APIs

Brief Introduction on these: Using Android Data and Storage APIs, Managing data using SQLite, Sharing Data between Applications with Content Providers, Using Android Networking APIs, Using Android Web APIs, Using Android Telephony APIs, Deploying (selling) your Android application

References:

1. "Android Wireless Application Development", Lauren Darcey and Shane Conder, 2ndedition, Pearson Education.
2. "Professional Android 2 Application Development", Reto Meier, Wiley India.
3. "Beginning Android", Mark L Murphy, Wiley India.
4. "Pro Android", Sayed Y Hashimi and Satya Komatineni, Wiley India.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	3	2	3	2	2	1	1	2	2
CO 2	3	3	3	3	3	2	1	2	2	2
CO 3	3	3	3	3	2	3	1	2	3	3
CO 4	3	3	3	3	3	2	1	2	3	3
Weighted Average	3	3	2.75	3	2.50	2.25	1	1.75	2.5	2.5

1: Low, 2: Moderate, 3: High

SC LINUX PROGRAMMING 3:0:1

Objectives:

- Understand and make effective use of Linux utilities and Shell scripting language (bash) tosolve Problems.
- Implement in C some standard Linux utilities such as ls, mv, cp etc. using system calls.
- Develop the skills necessary for systems programming including file system programming, process and signal management, and interprocess communication.
- Develop the basic skills required to write network programs using Sockets.

Outcomes:

- Work confidently in Linux environment with an understanding of the architecture and shellprogramming.
- Work with sed/awk and gain ability to write programs using file and directory relatedsystem calls
- Ability to handle processes using process related system calls
- Ability to write communicating programs using different IPC mechanisms and Berkeleysockets.

Unit I:

A brief history of Unix and Linux, Architecture, Features.

Unix/Linux Shell : Linux shell commands for getting help: Commands for getting help :whatis, man,info, apropos.

Useful unix/linux shell commands :pwd, whoami, who, ls, env, echo, history, passwd, cat, more, less, file, chmod, chown, cp, mv, mkdir, rmdir, whereis, which, locate, ln.

Quick overview of basic Linux Utilities: File handling utilities, links: hard and symbolic links, Security by file permissions, Process utilities, Disk utilities, Networking commands, Filters: grep, Text processing utilities and Backup utilities.

Shell programming with Bourne again shell(bash)- Introduction, shell responsibilities, tab completion, pipes and Redirection, here documents, running a shell script, the shell as a programming language, shell meta characters, file name substitution, shell variables, command substitution, shell commands, the environment, quoting, test command, control structures, arithmetic in shell, shell script examples.

Unit II:

Sed and Awk:

Sed: Scripts, Operation, Addresses, Commands.

Awk: Execution, Fields and Records, Scripts, Operation, Patterns, Actions, Associative Arrays, String and Mathematical functions, System commands in awk, Applications.

System Calls:

Files and Directories: File Concept, File types, File System Structure, file metadata: inodes, kernel support for files, system calls for file I/O operations: open, create, read, write, close, lseek, dup2, file status information: stat family, fcntl, file permissions: chmod, fchmod, file ownership: chown, lchown, symbolic and hard links: symlink, link, unlink.

Directories: Creating, removing and changing Directories: mkdir, rmdir, chdir, obtaining current working directory: getcwd, Directory contents, Scanning Directories: opendir, readdir, closedir, rewinddir functions.

Unit III:

Process : Process concept, Layout of a C program image in main memory. Process environment :environment list, environment variables, getenv, setenv, Kernel support for process, process identification, process control : process creation, replacing a process image, waiting for a process, process termination, zombie process, orphan process, system call interface for process management-fork, vfork, exit, wait, waitpid, exec family, Process Groups, Sessions and Controlling Terminal, Differences between threads and processes.

Unit IV:

Inter process Communication: Introduction to IPC, IPC between processes on a single computer system, IPC between processes on different systems, pies-creation, IPC between related processes using unnamed pipes, FIFO: creation, IPC between unrelated processes using FIFOs(Named pipes), differences between unnamed and named pipes, popen and pclose library functions.

Sockets: Introduction to Berkeley Sockets, IPC over a network, Client-Server model, Socket address structures (unix domain and Internet domain), Socket system calls for connection oriented protocol and connectionless protocol, example: client/server programs-Single Server-Client connection, Comparison of IPC mechanisms.

References:

1. Linux “man” pages and “info” pages.
2. The Linux Documentation Project : http://www.tldp.org/
3. Unix Concepts and Applications - Sumitabha Das, 4th Edition, TMH.
4. Beej's Guide to Network Programming : https://beej.us/guide/bgnet/
5. Advanced Programming in the UNIX Environment - , Richard W. Stevens, Stephen A.Rago, Second Edition, Addison-Wesley.
6. Unix Network Programming - Richard W. Stevens , PHI.
7. System Programming using C++ - T. Chan, PHI.
8. Beginning Linux Programming - N. Mathew, R. Stones, 4th Edition, Wrox, Wiley IndiaEdition.
9. C Programming Language - Brian W. Kernighan, Dennis M. Ritchie, PHI.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	1	-	1	2	1	1	1	1
CO 2	3	2	1	-	1	-	1	1	1	1
CO 3	3	2	1	1	1	-	1	1	1	1
CO 4	3	2	1	1	1	-	1	1	1	1
Weighted Average	3	2	1	1	1	2	1	1	1	1

1: Low, 2: Moderate, 3: High

SC INFORMATION RETRIEVAL 3:0:1

Objectives:

- Become familiar with difference between Information retrieval and data Base ManagementSystems.
- Learn different indexing techniques used in retrieval system.
- Understand the concepts of cluster analysis.
- Understand the text classification techniques.

Outcomes:

- Locate relevant information in large collections of data.
- Impart features of retrieval systems for Text data.
- Analyze the performance of retrieval systems using test collection.
- Implement different clustering algorithms.

Unit I: Boolean retrieval and classical models

An example information retrieval problem, A first take at building an inverted index, Processing Boolean queries; The term vocabulary and postings lists: Document delineation and character sequence decoding, Determining the vocabulary of terms, Faster posting list intersection via skip pointers, Positional postings and phrase queries. Index construction – Blocked sort-based indexing, Single-pass in-memory indexing, Distributed indexing, dynamic indexing, other types of indexes.

Unit-II: Computing scores in a complete search system

Efficient scoring and ranking, components of an information retrieval system, vector space scoring and query operator interaction, information retrieval system evaluation, Standard test collections, Evaluation of unranked and ranked retrieval results, Assessing relevance, A broader perspective: System quality and user utility, Results snippets

Unit-III: Data Cluster analysis

Introduction to Cluster Analysis, Different Types of clustering's, Different types of clusters, Kmeans – the basic K-means algorithm, additional Issues, K – means and different types of clusters, Strengths and weaknesses, K – means as an optimization Problem, DBSCAN – Center based approach, The DBSCAN Algorithm, Strengths and weaknesses, Fuzzy Clustering, Minimum spanning tree clustering

Unit-IV: Text classification and naive bayes

The text classification problem, Naive bayes text classification, properties of Naive bayes, feature selection; Support vector machines and machine learning on documents - Support vector machines: The linearly separable case, Issues in the classification of text documents, Machine – learning methods in ad hoc information retrieval; Web search basics – Background and history, Web characteristics, Advertising as the economic model, The search user experience;

References:

1. Introduction to information Retrieval – Christopher D.Manning, PrabhakarRaghavan,HinrichSchutze, Cambridge University Press.
2. Introduction to Data Mining – Pang – Ning Tan, Vipin Kumar, Michael Steinbach, Pearson.
3. Information Retrieval: Algorithms and Heuristics - David A. Grossman, Ophir Frieder,Second Edition, Springer.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	1	3	2	-	2	2	1	1	1	1
CO 2	-	3	3	2	2	-	1	1	1	1
CO 3	1	3	3	2	2	-	1	1	1	1
CO 4	1	3	3	2	2	-	1	1	1	1
Weighted Average	1	3	2.75	2	2	2	1	1	1	1

1: Low, 2: Moderate, 3: High

SC **BIG DATA ANALYTICS** **3:0:1**

Objectives:

- Understand the Big Data Ecosystem.
- Introduce the students to Hadoop.
- To understand the concepts of Map Reduce and MongoDB
- To understand data Analysis using R

Outcomes:

- Apply the Data Analytics Life Cycle to real life cases.
- Process Data with Hadoop.
- Apply the necessary techniques for data analytics.
- Demonstrate Data Analysis using R.

Unit I: Introduction to Big Data Analytics.

Big Data Overview, State of the Practice in Analytics, Key Roles for the New Big Data Ecosystem, Examples of Big Data Analytics, Data Analytics Lifecycle Overview, Phase 1: Discovery, Phase 2: Data Preparation, Phase 3: Model Planning, Phase 4: Model Building , Phase 5: Communicate Results, Phase 6: Operationalize.

Unit II: Introduction to Hadoop

Introducing Hadoop, Why Hadoop?, Why not RDBMS? RDBMS versus Hadoop, Distributed Computing Challenges, History of Hadoop, Hadoop Overview, Use Case of Hadoop, Hadoop Distributors, HDFS (Hadoop Distributed File System), Processing Data with Hadoop, Managing Resources and Applications with Hadoop YARN (Yet Another Resource Negotiator), Interacting with Hadoop Ecosystem.

Unit III: Introduction to MAPREDUCE Programming and Mongo DB

Introduction, Mapper, Reducer, Combiner, Partitioner, Searching, Sorting, Compression, Introduction to MongoDB, Situation where MongoDB is useful, Terms Used in RDBMS and MongoDB, Data Types in MongoDB, MongoDB Query Language.

Unit IV: Review of Basic Data Analytic Methods Using R

Introduction to R, Exploratory Data Analysis.

REFERENCES:

1. Data Science & Big Data Analytics: Discovering, Analyzing, Visualizing and PresentingData, EMC Education Services, John Wiley & Sons, Inc.
2. Big Data and Analytics, 2ed, Seema Acharya, Subhashini Chellappan, Wiley.
3. Data Science and Analytics, V.K.Jain, Khanna Publishing.
4. Big Data Analytics, M. Vijayalakshmi, Radha Shankarmani, Wiley

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	2	2	3	1	1	-	-	-
CO 2	3	3	2	3	3	1	1	1	2	1
CO 3	3	2	3	3	3	2	1	2	3	3
CO 4	3	2	3	3	3	2	1	2	3	3
Weighted Average	3	2.25	2.5	2.75	3	1.5	1	1.25	2	1.75

1: Low, 2: Moderate, 3: High

SC MACHINE LEARNING USING PYTHON 3:0:1

Objectives:

- Understanding the importance of Machine Learning and demonstrate the use of data framesin Python
- Analyze the process of model building and evaluation
- Comprehend various classification problems
- Discuss the libraries required to implement the techniques of Machine Learning.

Outcomes:

- Identify the need for Machine Learning using Python, appropriate data frames and itsoperations.
- Ability to build and validate linear regression models
- Ability understand different classification techniques and build classification models
- Ability to use unsupervised learning techniques to cluster data and Apply Scikit library forMachine Learning.

UNIT – I: Introduction to Machine Learning

Introduction to Analytics and Machine Learning, Need for Machine Learning, Framework for Developing Machine Learning Models, Python for Machine Learning, Python Stack for Data Science, Getting Started with Anaconda Platform, Introduction to Python.

Descriptive Analytics: Working with Data Frames in Python, Handling Missing Values, Explorationof Data using Visualization

UNIT – II: Linear Regression

Simple Linear Regression, Steps in Building a Regression Model, Building Simple Linear, Regression Model, Model Diagnostics, Multiple Linear Regression.

UNIT – III: Classification Problems

Classification Overview, Binary Logistic Regression, Credit Classification, Gain Chart and Lift Chart, Classification Tree (Decision Tree Learning).

UNIT – IV: Advanced Machine Learning and Clustering

Scikit-Learn Library for Machine Learning Advanced Machine Learning Algorithms. Clustering: Overview, How Does Clustering Work?, K-Means Clustering, Creating Product Segments Using Clustering, Hierarchical Clustering.

References

1. Machine Learning using Python, Manaranjan Pradhan, U Dinesh Kumar, Wiley India Pvt. Ltd., 2019
2. Practical Programming: An introduction to Computer Science Using Python, second edition,Paul Gries, Jennifer Campbell, Jason Montojo, The Pragmatic Bookshelf, 2013.
3. Learning with Python: How to Think Like a Computer Scientist Paperback – Allen Downey , Jeffrey Elkner, 2015.
4. Python Data Science Handbook: Essential tools for working with data, Jake Vander plas, O'Reilly Publishers,1st Edition.
5. Hands-On Machine Learning with Scikit-Learn and TensorFlow Concepts, Tools, and Techniques to Build Intelligent Systems, Aurelien Geron, O'Reilly Publisher , I edition, 2017

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	3	3	3	3	3	2	1	1	3	3
CO2	3	3	3	3	3	2	1	1	3	3
CO3	3	3	3	3	3	3	1	1	3	3
CO4	3	3	3	3	3	2	1	1	3	3
Weighted Average	3	3	3	3	3	2.25	1	1	3	3

1: Low, 2: Moderate, 3: High

SC **ADVANCED JAVA** **3:0:1**

Objectives:

- Define JDBC and describe the various JDBC drivers.
- List the advantages and explain the life cycle of a servlet.
- Understand various types of properties in Java beans.
- To Know the applications of Java Server Pages.

Outcomes:

- Develop component-based Java software using JavaBeans.
- Develop server-side programs in the form of servlets.
- Implement Entity Java bean in stateless and stateful environment.
- Employ the concepts of EJB and JAR files.

Unit I: J2EE overview and JDBC

The ABC of Programming Languages, Taking Programming Languages up a notch, Distributive Systems – Real Time Transmissions, Software objects, Web services, The Tier – Clients, Resources and Components, J2EE Multi – Tier Architecture, Client tier implementation, Enterprise Application Strategy, A new Strategy, The Enterprise Application.

Unit II: Servlets

Introduction, Life cycle of servlet, A simple Java servlet, Anatomy of Java servlet – Deployment Descriptor, Reading Data from a client, Reading HTTP Request Headers, Sending Data to a client and writing the HTTP Response Header, Cookies and Tracking Sessions

Unit III: Java Server Pages

Introduction, JSP tags – Variables and Objects, Methods, Control statements, Loops, Tomcat, Request String, User Sessions, Cookies, Session objects

Unit IV: Enterprise JavaBeans

Introduction, EJB containers, classes and interfaces, Deployment Descriptors – Anatomy, Environment Elements, Referencing EJB and other resources, query element; Session Java Bean- Stateless and stateful, creating a session java bean; Entity Java Bean – Container Managed Persistence, Bean Managed Persistence; The JAR File

References:

1. The Complete Reference J2EE, Jim Keogh, 1st edition, McGraw Hill Education.
2. Core and Advanced Java, Black Book, Dreamtech Press.

Course articulation matrix:

PO	Program Outcomes									
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**
CO 1	**3**	**2**	**-**	**1**	**3**	**1**	**1**	**1**	**-**	**2**
CO 2	**3**	**2**	**2**	**2**	**3**	**1**	**1**	**1**	**2**	**3**
CO 3	**3**	**3**	**3**	**2**	**3**	**1**	**1**	**1**	**2**	**3**
CO 4	**3**	**2**	**2**	**1**	**3**	**1**	**1**	**1**	**2**	**3**
Weighted average	**3**	**2.25**	**1.75**	**1.5**	**3**	**1**	**1**	**1**	**1.5**	**2.75**

1: Low, 2: Moderate, 3: High

SC MANAGEMENT INFORMATION SYSTEMS 3:1:0

Objectives:

- Understand the role information system in business.
- Learn different functional business management systems.
- Understand e-commerce applications and decision support systems.
- Analyzing security and ethical challenges in IT.

Outcomes:

- Explain the role of IS in business.
- Ability to explain different enterprise management and functional management systems inbusiness.
- Identify the applications of e-commerce and issues of e-commerce.
- Understand decision support systems.

Unit I: Information System Concepts

Information Systems in Business: Introduction, The real world of Information Systems, The fundamental role of IS in business, Trends in IS, Types of Information systems, Managerial challenges of IT.

System Concepts: A foundation, Components of an Information System, Information System Resources, Information System activities, Recognizing Information Systems.

Unit II: Enterprise Business Systems and Functional Business System

Enterprise Business Systems: Introduction, Cross-functional enterprise applications, Enterprise application integration, Transaction processing systems, Enterprise collaboration systems. Functional Business Systems: Introduction, Marketing systems, Manufacturing systems, Human resource systems, Accounting systems, financial management systems.

Customer relationship management: Introduction, Introduction to CRM, The three phases of CRM, Benefits and challenges of CRM, Trends in CRM, Enterprise resource planning: Introduction, Introduction to ERP, Benefits and challenges of ERP, Trends in ERP. Supply chain Management: Introduction, Introduction to SCM, The role of SCM, Benefits and challenges of SCM, Trends in SCM

Unit III: Electronic Commerce and Decision Support Systems

Electronic commerce fundamentals: Introduction, The scope of e-commerce, Essential e-commerce,processes, Electronic payment processes.

e-Commerce applications and issues: E-commerce application trends, Business-to-Consumer e- commerce, Web store requirements, Business-to-Business e-commerce, e-commerce marketplaces, Clicks and bricks in ecommerce.

Decision Support Systems- Decision support in business: Introduction, Decision support trends, Decision support systems (DSS), Management Information Systems, On-line analytical processing, Using DSS, Executive information systems, Enterprise portals and decision support, Knowledge management systems, Business and Artificial Intelligence (AI), An overview of AI, Expert systems.

Unit IV: Security and Ethical Challenges, Security Management in IT

Security and Ethical Challenges: Security, Ethical and societal challenges of IT: Introduction, Ethical responsibility of business professionals, Computer crime, Privacy issues, other challenges, Health issues, societal solutions. Security management of IT: Introduction, Tools of security management, Internetworked security defenses, other security measures, System Controls and audits.

References:

1. Management information systems- managing information technology in the internet worked enterprise, James A. O'Brien, George M. Marakas, 7th edition, Tata McGraw-Hill PublishingCompany Limited.
2. Management information systems, S Sadogopan, 2nd edition, PHI.
3. Information systems for modern management, Robert G. Murdick, 3rdeditionPHI.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	1	2	2	1	1	1	1	1	1
CO2	2	1	2	2	2	2	1	1	1	1
CO3	1	1	3	3	2	1	1	1	1	1
CO4	1	1	3	3	2	1	1	1	1	1
Weighted Average	1.5	1	2.5	2.5	1.75	1.25	1	1	1	1

1: Low, 2: Moderate, 3: High

SC **BUSINESS INTELLIGENCE** **3:1:0**

Objectives:

- Understand the basics of Business Intelligence and its evolution.
- Know the concepts of querying, reporting and OLAP architecture.
- Learn about the Business Intelligence lifecycle and its methodologies.
- Get an overview of various technologies associated with Business Intelligence.

Outcomes:

- Acquire the knowledge on Business Intelligence methodologies.
- Comprehend the User models of Business Intelligence in real time scenarios.
- Employ the lifecycle strategies on various BI capabilities.
- Compare and contrast various BI implementations in major companies.

Unit I: Introduction and Basics

Understanding Business Intelligence: Limited Resources, Limitless Decisions, Business Intelligence Defined: No CIA Experience Required, BI's Big Four, The BI Value Proposition, A Brief History of BI, Data collection from stone tablets to databases, BI's Split Personality: Business and Technology, BI: The people perspective; Meeting the BI Challenge: The BI Spectrum- Enterprise versus departmental BI, Strategic versus tactical business intelligence, Power versus usability in BI tools, Reporting versus predictive analytics

Unit II: Business Intelligence User Models and OLAP

Basic Reporting and Querying: Querying and reporting in context, Reporting and querying toolkit characteristics, Self-Service Reporting and Querying, Building and using ad-hoc queries, building simple on-demand self-service reports, Adding capabilities through managed querying/reporting, Data Access: Classical BI: pull-oriented information access, Emerging BI: pushing critical insights to users. OLAP: Online Analytical Processing: OLAP in Context, OLAP Application Functionality, OLAP Architecture: The OLAP Cube, OLAP access tools. OLAP versus OLTP

Unit III: The BI Lifecycle

The BI Big Picture: So Many Methodologies, So Little Time, Starting at the beginning, The exception to the rule: Micro-BI, Customizing BI for Your Needs: Your not-so-clean slate, Initial activities, Selecting BI products and technologies, Taking a Closer Look at BI Strategy: The Big Picture, Your Current BI Capabilities (or Lack Thereof), Assessing your business infrastructure, Assessing the technology stack, top to bottom, Keep the good stuff, Throw out the bad stuff

Unit IV: BI and Technology

Data Warehouses and BI, consolidating information across silos, Structuring data to enable BI, Data Models, Dimensional data model, Other kinds of data models, Data Marts, Operational Data Stores, The BI Software Marketplace - A little history, Mergers and acquisitions Major Software Companies in BI – Oracle, Microsoft, SAP, IBM

References:

1. Business Intelligence For Dummies- Swain Scheps, 1st edition, Wiley publishing.
2. Business Intelligence and Analytics: Systems for Decision Support, Ramesh Shardha. 10thedition, Pearson, 2014.
3. Business analytics for managers: taking business intelligence beyond reporting, Gert H.N,2nd edition, Wiley Publishing.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	2	1	1	1	1	1	1	1	1
CO 2	3	2	1	2	1	1	1	1	1	1
CO 3	3	3	1	2	1	1	1	1	1	1
CO 4	3	3	1	1	1	1	1	1	1	1
Weighted Average	2.75	2.5	1	1.5	1	1	1	1	1	1

1: Low, 2: Moderate, 3: High

SC ENTREPRENEURSHIP DEVELOPMENT 3:1:0

Objectives:

- To know the fundaments of entrepreneurship
- To learn importance of women and rural entrepreneurship
- To understand different motivating factors for entrepreneurs
- To know essence and characteristics of management

Outcomes:

- Analyze the history and need for entrepreneurship
- Employ the functions of women and rural entrepreneurship
- Inculcating the behaviors of entrepreneurs
- Comprehend the need and importance of management

Unit I: Entrepreneur & Entrepreneurship

Introduction, Evolution of the concept of Entrepreneur, Characteristics of successful entrepreneurs, the charms of becoming of an Entrepreneur, The Entrepreneurial Decision Process, Functions of Entrepreneur, Need for an Entrepreneur, Types of Entrepreneurs, Concept of Entrepreneurship, Growth of Entrepreneurship in India.

Unit II: Women and Rural Entrepreneurship

Concept of Women Entrepreneur, Functions of Women Entrepreneurs, Growth of Women Entrepreneurship in India, Problems of Women Entrepreneur, Developing Women Entrepreneurship, Meaning of Rural Entrepreneurship, Need for Rural Entrepreneurship, Rural Entrepreneurship/Industrialization in Retrospect, Problems of Rural Entrepreneurship. How to develop Rural Entrepreneurship.

Unit III: Entrepreneurial Motivation

Meaning of Entrepreneurial Motivation, Motivational Cycle or Process, Entrepreneurial Motivating Factors, Entrepreneurial Motivational Behavior – Creativity, Self-Efficacy, Locus of control, Risk taking, Leadership, Communication

Unit-IV: Management

Meaning of Management, Characteristics of Management, Difference between Management and Administration, Management as Science, Art and Profession, Importance of Management, Scope of Management, Functions of Management, Management Process, Principles of Management.

References:

1. Entrepreneurial Development, S.S Khanka, 1st edition, S.Chand Publication.
2. Dynamics of Entrepreneurship Development, Vasant Desai,6th edition, Himayala PublishingHouse.
3. Entrepreneurship: New Venture Creation,David H. Holt, Pearson Publication.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	1	3	2	1	2	1	1	1	1
CO2	1	1	1	1	1	2	1	2	1	2
CO3	-	1	2	1	1	2	1	1	1	1
CO4	-	1	1	1	1	1	1	3	2	1
Weighted Average	0.75	1	1.75	1.5	1	1.75	1	1.75	1.25	1.25

1: Low, 2: Moderate, 3: High

SC COMMUNICATION SKILLS 3:1:0

Objectives:

- The factors governing good communication and how good communication skills can bedeveloped.
- How good communication skills are a critical building block to both personal and businesssuccess.
- How to use effective communication skills in business.
- The need to modify communication depending on business situation and circumstances.

Outcomes:

- Understand and apply knowledge of human communication and language processes as theyoccur across various contexts from multiple perspectives.
- Understand and evaluate key theoretical approaches used in the interdisciplinary field ofcommunication.
- Find, use, and evaluate primary academic writing associated with the communicationdiscipline.
- Communicate effectively orally and in writing.

Unit I

Importance of communication, its basic model, formal and informal communications, barriers to communication, feedback and its effectiveness, Non- Verbal communication.

Unit II

Oral communication, Speaking: Paralanguage: Sounds, stress, intonation- Art of conversation – Presentation skills, – Public speaking- Expressing Techniques, understanding your audience, importance of listening, role of visual aids, persuasive communication.

Unit III

Written communication – Good writing – Styles and Principles – Text, Email, Memorandums, reports, Letters, resume writing.

Unit IV

Group Discussion, Interview skills- types of interviews, telephonic interview, Time management, Stress management.

References

1. Business Communication for Success, University Of Minnesota Libraries PublishingEdition, 2015.
2. Soft skills: know yourself & know the world, Dr. Alex K.
3. Basic Management skills for all, S J McGrath E H, 9th Edition, PHI Learning.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	1	-	-	-	2	-	3	3	2	3
CO 2	1	-	3	3	2	3	-	3	3	3
CO 3	1	3	3	-	2	2	-	3	3	3
CO 4	1	-	3	3	-	2	-	3	3	3
Weighted Average	1	3	3	3	2	2.33	3	3	2.75	3

1: Low, 2: Moderate, 3: High

SC PROFESSIONAL ETHICS AND HUMAN VALUES 3:1:0

Objectives:

- Understand the fundamentals of Human values.
- Know the concepts of engineering ethics and responsibilities.
- Learn about the Business Intelligence lifecycle and its methodologies.
- Get an overview of Global issues and its practices.

Outcomes:

- Implement the aspects of Human Values.
- Interpret the ethics of engineering and its associated responsibilities.
- Employ the code of ethics in their profession.
- Display the awareness of Global issues in Ethics.

Unit I: Human Values

Objectives, Morals, Values, Ethics, Integrity, Work ethics, Respect for others, living peacefully, Honesty, Courage, Valuing time, Cooperation, Commitment, Self-confidence, Challenges in the work place, Spirituality.

Unit II: Engineering Ethics, Safety, Responsibilities and Rights.

Overview, Senses of engineering ethics Variety of moral issues, Moral dilemma, Moral autonomy Profession, Models of professional roles, Responsibility, Self-control, Self-interest, Self-respect, Safety definition, Safety and risk, Risk analysis, Confidentiality, Employee rights, Whistle Blowing.

Unit III: Engineering as Social Experimentation

Engineering as experimentation, Engineers as responsible experimenters, Codes of ethics, Industrialstandards, A balanced outlook on law, Case-Study.

Unit IV: Global Issues

Globalization, Multinational corporations, Environmental ethics, Computer ethics, Weapons development, Engineers as managers, Engineers as advisors in planning and policy making, Moral leadership.

References:

1. A Textbook on Professional Ethics and Human Values - R. S. Naagarazan, New ageinternational publishers.
2. Human Values and Professional Ethics, Dr. Gurpreet Singh Uppal, 1st edition.
3. Human Values, Tripathi A. N., 3rd edition, New Age International Pvt Ltd Publisher.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	1	-	1	1	1	2	3	2	1	3
CO2	1	2	1	1	1	2	3	2	1	3
CO3	1	-	1	1	1	2	3	2	1	3
CO4	1	-	1	1	1	2	3	2	1	3
Weighted Average	1	2	1	1	1	2	3	2	1	3

1: Low, 2: Moderate, 3: High

SC CYBER SECURITY 3:1:0

Objectives:

- Understand cybercrime, legal issues and cyber offences.
- Make the students understand the various crimes using mobiles.
- Learn the tools and methods employed for committing cyber-crime.
- Impart the various topics relating to Computer Forensics.

Outcomes:

- Understand the concept of cybercrime and offenses.
- Analyze the problems relating to cyber-crimes using mobile phones.
- Demonstrate the various attacks of cyber-crime.
- Understand and apply Computer Forensics at problem areas.

Unit I: Cybercrime and Cyber offenses

Cybercrime: Introduction, Cybercrime definition and origins of the word, Cybercrime and information security, who are Cybercriminals, Classifications of cybercrimes, Cybercrime: The legal perspectives, Cybercrimes: An Indian perspective, Cybercrime and the Indian ITA 2000, a global Perspective on cybercrimes.

Cyber offenses: Introduction, How criminal plan the attacks, Social Engineering, Cyber stalking, Cybercafé and Cybercrimes, Botnets: the Fuel for Cybercrime.

Unit II: Cybercrime: Mobile And Wireless Devices

Cybercrime: Mobile and Wireless Devices: Introduction, Proliferation of Mobile and Wireless Devices, Trends in Mobility, Credit Card Frauds in Mobile and Wireless Computing Era, Security Challenges Posed by Mobile Devices, Registry Settings for Mobile Devices, Authentication Service Security, Attacks on Mobile/Cell Phones, Mobile Devices: Security Implications for Organizations, Organizational Measures for Handling Mobile Devices-Related Security Issues, Organizational Security Policies and Measures in Mobile Computing Era, Laptops.

Unit III: Tools and Methods Used in Cybercrime

Introduction, Phishing, Password Cracking, Key loggers and Spywares, Virus and Worms, Trojan Horses and Backdoors, Steganography, DoS and DDoS Attacks, SQL Injection, Buffer Overflow, Attacks on Wireless Networks.

Unit IV: Computer Forensics

Introduction, Historical background of cyber forensics, Digital forensics science, the need for computer forensics, cyber forensics and digital evidence, forensics analysis of email, digital forensics life cycle, Computer forensics and steganography, Forensics and social networking: The security/privacy threats, Challenges in computer forensics.

References:

1. Cyber Security, Nina Godbole, SunitBelapure, 1st edition, Wiley Publication.
2. Cyber Security & Global- Kennetch J. Knapp, Information Science Reference.
3. Information Systems Security, Nina Godbole, 1st edition, Wiley India.
4. Principles of Information Security, Michael E. Whitman,Herbert J. Mattord, 6th edition,Cengage Learning.
5. Cryptography and Network Security, William Stallings, 4th edition, Pearson Publication.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	1	2	1	2	2	1	1	1	1
CO2	3	1	3	3	2	2	1	1	1	1
CO3	2	1	-	2	2	1	-	1	1	-
CO4	1	1	2	2	2	1	-	1	1	-
Weighted Average	2	1	1.75	2	2	1.5	0.5	1	1	0.5

1: Low, 2: Moderate, 3: High

SC SIMULATION AND MODELING 3:0:1

Objectives:

- To make students understand the basic principles of Simulation, system components and itsapplications.
- To learn Properties of Random numbers, algorithms to generate Random numbers and Testsfor Random numbers. .
- To understand different methods for random Variant generation.
- To learn Model Building, Verification and Validation of simulation models and also understand the different types of simulations with respect to output analysis.

Outcomes:

- Analyze the different Components of System and identify the Applications of Simulation.
- Implement different algorithms associated with generation of Random numbers and test forRandom numbers.
- Implement different methods of generating the Random Variants.
- Analyze the different techniques in Verification and Validation of simulation models and theoutput analysis for different types of Simulations.

Unit I: Introduction to Simulation

Definition of Simulation, Simulation as an Appropriate and In appropriate tool, Applications of Simulation; Systems and System Environment, Components of a system, Model of a system, types and examples; discrete and continuous systems.

Unit II: Random Number Generation

Properties of Random Numbers, Generation of Pseudo-Random Numbers, Techniques for Generating Random Numbers, Tests for Random Numbers (Algorithms and Problems)- Frequency tests, Runs Tests, Gap tests.

Unit III: Random Variate Generation

Inverse Transform Technique, Direct Transformation for the normal Distribution; Convolution Method, Acceptance-Rejection Technique.

Unit-IV: Verification and Validation of Simulation Models

Model Building, Verification and Validation, Verification of Simulation Models, Calibration and Validation of models – Validating Input – Output Transformations; Output Analysis for a Single Model – Types of Simulations with Respect to Output Analysis, Output Analysis for Terminating Simulations, Output Analysis for steady state Simulations – Replication Method

References:

1. Discrete Event System Simulation – Jerry Banks, John S Carson II, Barry L Nelson, DavidM Nicol, Pearson Education Asia.
2. System Simulation - Geoffrey Gordon, Prentice Hall India.
3. System Simulation with Digital Computers - N. Deo, PHI.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	2	1	1	1	1	1	1	1	2	2
CO2	3	3	3	3	3	-	1	1	1	1
CO3	2	2	2	2	2	-	1	-	1	1
CO4	2	2	2	1	2	-	1	-	1	1
Weighted Average	2.25	2	2	1.75	2	1	1	1	1.25	1.25

1: Low, 2: Moderate, 3: High

SC ARTIFICIAL INTELLIGENCE 3:1:0

Objectives:

- To understand and identifying the problems where AI is required.
- To compare and contrast different AI techniques.
- To understand the concepts of knowledge Representation.
- To understand the NLP techniques.

Outcomes:

- Express the modern view of AI and its foundation.
- Illustrate Search Strategies with algorithms and Problems.
- Implement Proportional logic and apply inference rules.
- Apply suitable techniques for NLP and Game Playing.

Unit-I: INTRODUCTION

Introduction to AI, The Foundations of AI, AI Technique -Tic-Tac-Toe. Problem characteristics, Production system characteristics, Production systems: 8-puzzle problem. Intelligent Agents: Agents and Environments, Good Behavior: The concept of rationality – The nature of Environments, The Structure of Agents.

Unit-II: LOCAL SEARCH ALGORITHM

Searching: Uninformed search strategies – Breadth first search, depth first search. Generate and Test, Hill climbing, simulated annealing search, Constraint satisfaction problems, Greedy best first search, A* search, AO* search.

Unit-III : KNOWLEDGE REPRESENTATION

Propositional logic - syntax & semantics - First order logic. Inference in first order logic, propositional Vs. first order inference, unification & lifts, Clausal form conversion, Forward chaining, Backward chaining, Resolution.

Unit-IV: GAME PLAYING, PLANNING and NLP

Overview, Minimax algorithm, Alpha-Beta pruning, Additional Refinements. Classical planning problem, Natural Language Processing: Language Models, Text classification, Information Retrieval, Information Extraction.

Reference Books:

1. Artificial Intelligence, E. Rich and K. Knight, , 3rd Edition, TMH.
2. Artificial Intelligence A Modern Approach, S. Russell and P. Norvig, 3rd Edition,Pearson Education.
3. Introduction to Artificial Intelligence, Eugene Charniak and Drew McDermott, 2nd Edition, Pearson Education.
4. Artificial Intelligence Structures and Strategies for Complex Problem Solving, George FLuger, 4th Edition, Pearson Education.
5. Artificial Intelligence: A New Synthesis, N.L. Nilsson, Morgan Kaufmann.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	3	3	3	3	3	3	2	2	2	3
CO2	3	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	2	2	3
CO4	3	3	3	3	3	3	2	2	3	3
Weighted Average	3	3	3	3	3	3	2.25	2	2.5	3

1: Low, 2: Moderate, 3: High

SC **Research Methodology** **3:1:0**

OBJECTIVES:

- To give an overview of the research methodology and explain the technique of defining a research problem.
- To explain the functions of the literature review in research.
- To explain carrying out a literature search, its review, developing theoretical and conceptual frameworks and writing a review.
- To explain various research designs and their characteristics.

OUTCOMES:

- Identify the suitable research methods and articulate the research steps in a proper way.
- Explain the functions of the literature review in research, carrying out a literature search.
- Explain various research designs, sampling designs, measurement and scaling techniques.
- Perform the data collection from various sources segregate the primary and secondary.

UNIT I:

Research Methodology: Introduction, Meaning of Research, Objectives of Research, Motivation in Research, Types of Research, Research Approaches, Significance of Research, Research Methods versus Methodology, Research and Scientific Method, Importance of Knowing How Research is Done, Research Process, Criteria of Good Research, and Problems Encountered by Researchers in India.

UNIT II:

Defining the Research Problem: Research Problem, Selecting the Problem, Necessity of Defining the Problem, Technique Involved in Defining a Problem, An Illustration. Reviewing the literature: Place of the literature review in research, Bringing clarity and focus to your research problem, Improving research methodology, Broadening knowledgebase in research area, Enabling contextual findings, How to review the literature, searching the existing literature, reviewing the selected literature, Developing a theoretical framework, Developing a conceptual framework, Writing about the literature reviewed.

UNIT III:

Research Design: Meaning of Research Design, Need for Research Design, Features of a Good Design, Important Concepts Relating to Research Design, Different Research Designs, Design of Sample Surveys: Introduction, Sample Design, Sampling and Non sampling Errors, Sample Survey versus Census Survey, Types of Sampling Designs.

UNIT IV:

Data Collection: Experimental and Surveys, Collection of Primary Data, Collection of

Secondary Data, Selection of Appropriate Method for Data Collection, Case Study Method. Interpretation: Meaning of Interpretation, Technique of Interpretation, Precaution in Interpretation, Significance of report writing, Different steps in writing report, Layout of the research report.

References:

1. Research Methodology: Methods and Techniques, C.R. Kothari, Gaurav Garg New Age International 4th Edition, 2018.
2. Research Methodology a step-by- step guide for beginners. (For the topic Reviewing the literature under module 2)Ranjit Kumar SAGE Publications Ltd 3rd Edition, 2011 Study Material.
3. Research Methods: the concise knowledge base Trochim, Atomic Dog Publishing, 2005.
4. Conducting Research Literature Reviews: From the Internet to Paper Fink A Sage Publications, 2009.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	3	2	2	1	1	2	2	1	2	1
CO2	-	2	1	1	1	1	1	1	3	1
CO3	1	2	1	1	1	1	1	1	1	1
CO4	2	1	1	1	1	2	1	1	1	1
Weighted Average	2	1.75	1.25	1	1	1.5	1.25	1	1.75	1

1: Low, 2: Moderate, 3: High

SC **NPTEL MOOC COURSE** **4 Credits**

NPTEL Certification Courses (MOOC Courses) NPTEL (National Programme on Technology Enhanced Learning) is a joint initiative of the IITs and IISc. Through this initiative, online courses and certification in various topics are offered to the students and scholars to enrich their knowledge in various domains.

Students shall submit certificates showing the credit points (no. of week course) earned through SWAYAM MOOCs to the Head of the department.

OE WORLD WIDE WEB 3:1:0

Objectives:

- To provide the conceptual and technological development in the field of Internet and webdesigning.
- To provide a comprehensive knowledge of Internet, its applications and the TCP/IPprotocols widely deployed to provide Internet connectivity worldwide.
- To understand how the World Wide Web with its widespread usefulness has become anintegral part of the Internet.
- To provide an overview of basic concepts of web design.

Outcomes:

- Understand the working scheme of the Internet and World Wide Web.
- Evaluate the various protocols of the Internet.
- Comprehend and demonstrate the application of Hypertext Mark-up Language (HTML).
- Apply the various security tools and understand the need of security measures.

Unit I

Introduction to Internet, Evolution and History of Internet, Growth of Internet, Internet Services, How Internet Works, Anatomy of Internet, Internet addressing, Internet vs. Intranet, and Impact of Internet.

Unit II

Internet Technology and Protocol: ISO-OSI Reference Model, Data Transmission, Switching, Routers, Gateways, and Network Protocols

Internet Connectivity: Different types of connections, Levels of Internet Connectivity and Internet Service Provider.

Unit III

Web Page Design-HTML: An Introduction, HTML Categories, HTML Fonts, HTML colors, HTML Lists, HTML Tables, HTML Links, HTML Forms, Adding Pictures and Image Attributes.

Unit IV

Computer Networks, Internet & Web Security: Computer Networks, Network Components, Network Topologies, Types of Network Architecture, Network Security, Firewall, Digital Signature, Authentication, Authorization , Copyright issues and Virus.

References

1. Internet Technology and Web Design by Instructional Software Research and Development(ISRD) Group, Tata MC Graw Hill.
2. Programming the World Wide Web, 4th Edition by Robert W. Sebesta.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	1	1	1	-	-	1	1	1	1
CO 2	2	1	1	1	-	-	1	1	1	1
CO 3	2	1	1	1	1	-	1	1	1	1
CO 4	2	2	2	1	1	1	1	1	1	1
Weighted Average	2	1.25	1.25	1	0.5	1	1	1	1	1

1: Low, 2: Moderate, 3: High

OE E-COMMERCE 3:1:0

Objectives:

- To impart knowledge on E-Commerce.
- To provide an overview of various applications connected with E-Commerce.
- To enable the learner for aiming careers in special software development involving E-Commercetechnologies.
- Understand the security issues in E – commerce.

Outcomes:

- Analyse the impact of E-commerce on business models and strategy
- Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra-organizational structures.
- Assess electronic payment systems and its securities.
- Recognize and discuss global E-commerce issues.

Unit 1: Introduction to E-Commerce

Definition, Scope of E-Commerce, Hardware requirements, E-Commerce and Trade Cycle, Electronic Markets, Electronic Data Interchange and Internet Commerce.

Unit 2: Business to Business E-Commerce

Electronic Markets, Electronic Data Interchange (EDI): Technology, Standards (UN/EDIFACT), Communications, Implementations, Agreements, Security, EDI and Business, Inter-Organizational Ecommerce. Business models for E-commerce, Business Process Re-Engineering.

Unit 3: Business to Consumer E-Commerce and E-Business

Consumer trade transaction, Web metrics, Elements of E-Commerce, Industry impacts of E- business. Integrating Intranet and internet web applications across multiple networks. Internet bookshops, Software supplies and support, Electronic Newspapers, Internet Banking, Virtual Auctions, Online Share Dealing, Gambling on the net, E-Diversity, Case studies through internet.

Unit 4: Security Issues

How criminals plan attacks, passive attack, Active attacks, cyber stalking, Secure Electronic Transaction (SET) Protocol, Electronic cash over internet, Internet Security, Search engines, Intelligent agents in E-Commerce Electronic payment systems

References

1. E-Commerce: Strategy, Technologies & Applications, David Whitley, McGraw Hill.
2. E-commerce: The Cutting Edge of Business, K. K. Bajaj and Debjani Nag, 2nd Edition,McGraw Hill.
3. Handbook of Electronic Commerce, Shaw et al., Springer.
4. Global Electronic Commerce- Theory and Case Studies, C. Westland and T. H. K. Clark,University Press.
5. Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives,SunitBelapure and Nina Godbole, Wiley India.

Course articulation matrix:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	1	1	2	2	2	2	1	1	2	2
CO2	2	1	2	2	2	1	1	1	1	1
CO3	2	1	1	1	2	1	1	1	1	1
CO4	2	1	2	2	2	1	1	1	1	2
Weighted Average	1.75	1	1.75	1.75	2	1.25	1	1	1.25	1.5

1: Low, 2: Moderate, 3: High

OE OFFICE AUTOMATION 3:1:0

Objectives:

- Provide a basic introduction to computers and computing environment.
- Enable the students in crafting professional documents using word pre-processors.
- Enable students use spreadsheets for tabulating and calculating data and create graphicalrepresentations of data.
- Enable students to design professional presentations.

Outcomes:

- Understand the basics of computer hardware and software.
- Prepare documents of different types.
- Ability to develop and use spreadsheets for tabulating and analysing for productivity.
- Prepare presentations.

Unit I

Introduction to Computers, Basic Anatomy of Computers and Introduction to MS-Office.

Unit II

MS-Word – Word Basics, Formatting Features, Menu, Commands, Tool Bars and their Icons, MailMerge and Macros Creating Tables.

Unit III

MS-Excel - Introduction, Menu, Commands, Tool Bars and their Icons, and Functions.

Unit IV

MS-Power Point – Menu, Toolbar, Navigating in PowerPoint, Working with PowerPoint andIntroduction to MS-Access.

References:

1. MS Office for Everyone – Sanjay Saxena, Vikas Publishing House.
2. Step by Step Microsoft Office XP, PHI.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	1	1	1	1	1	-	1	1	1	1
CO2	1	1	1	1	1	1	1	1	1	1
CO3	1	1	1	1	1	1	1	1	1	1
CO4	1	1	1	1	1	1	1	1	1	1
Weighted Average	1	1	1	1	1	1	1	1	1	1

1: Low, 2: Moderate, 3: High

COURSE RELATED RESEARCH ARTICLES:

Software Engineering

1. Taking the emotional pulse of software engineering —A systematic literature review of empirical studies, Mary Sánchez-Gordón , Ricardo Colomo-Palacios https://academic.oup.com/gigascience/articlepdf/doi/10.1093/gigascience/giz054/28698071/giz054.pdf
2. Software engineering for scientific big data analysis, Bjorn A. Gru¨ning , Samuel Lampa, Marc Vaudel and Daniel Blankenberg, https://www.researchgate.net/publication/333326758_Software_engineering_for_scientific_big_data_analysis
3. Software Engineering for Machine Learning: A Case Study, Saleema Amershi, Andrew Begel, Christian Bird, Robert DeLine, https://ieeexplore.ieee.org/abstract/document/8804457

Data Communication and Networks:

1. Comprehensive review for energy efficient hierarchical routing protocols on wireless sensor networks, Springer,2018, https://link.springer.com/article/10.1007/s11276-018-1696-1
2. A Survey on Recent Advances in Transport Layer Protocols, Michele Polese and et al, IEEE2019, https://ieeexplore.ieee.org/abstract/document/8786240

Cloud Computing:

1. Research on Key Technologies of Cloud Computing, Shufen Zhang, Hongcan Yan, XuebinChen, Published by Elsevier, https://www.sciencedirect.com/science/article/pii/S1875389212015994
2. Open Source Solution for Cloud Computing Platform Using OpenStack, Rakesh Kumar,Neha Gupta, Shilpi Charu, Kanishk Jain, Sunil Kumar Jangir, https://www.researchgate.net/publication/263581733_Open_Source_Solution_for_Cloud_C omputing_Platform_Using_OpenStack
3. The Challenges of Cloud Computing Management Information System in Academic Work, T.Rodmunkong,P.Wannapiroon,and P.Nilsook, https://www.researchgate.net/publication/273897590_The_Challenges_of_Cloud_Computing_Management_Information_System_in_Academic_Work

Cryptography and Network Security:

1. A Review Paper on Cryptography, Abdalbasit Mohammed Qadir and Nurhayat Varol, IEEE 2019, https://www.researchgate.net/profile/Abdalbasit_Mohammed/publication/334418542_A_Review_Paper_on_Cryptography/links/5db07f61299bf111d4c01521/A-Review-Paper-on- Cryptography.pdf

2. Security Evaluation of Computer Network Based on Hierarchy, Linbin Wen, InternationalJournal of Network Security,2019,. http://ijns.jalaxy.com.tw/contents/ijns-v21-n5/ijns-2019-v21-n5-p735-740.pdf

Internet of Things:

1. A Study on Internet of Things based Applications, Deeksha Jain, P. Venkata Krishna and V. Saritha, https://www.researchgate.net/publication/227172798_A_Study_on_Internet_of_Things_bas ed_Applications
2. IoT enabled Smart Fog Computing for Vehicular Traffic Control, Akashdeep Bhardwaj, Sam Goundar, https://eudl.eu/pdf/10.4108/eai.31-10-2018.162221
3. A Review of Smart Parking Using Internet of Things (IoT), Sahil Rupani, Nishant Doshi, https://www.sciencedirect.com/science/article/pii/S1877050919317235

Information Retrieval

1. Query expansion techniques for information retrieval: A survey, Hiteshwar Kumar Azad, Akshay Deepak, https://www.sciencedirect.com/science/article/pii/S0306457318305466
2. A Deep Look into neural ranking models for information retrieval, Jiafeng Guo, Yixing Fan, Liang Pang, Liu Yang, Qingyao AiHamed Zamani, Chen Wu, W. Bruce Croft, Xueqi Cheng, https://www.sciencedirect.com/science/article/pii/S0306457319302390
3. Fuzzy Information Retrieval Based on Continuous Bag-of-Words Model, Dong Qiu , Haihuan Jiang and Shuqiao Chen, https://www.mdpi.com/2073-8994/12/2/225

Big Data Analytics

1. Big data analytics as an operational excellence approach to enhance sustainable supply chain performance, Surajit Bag, Lincoln C. Wood, Lei Xud, Pavitra Dhamija, Yaşanur Kayikci, https://www.sciencedirect.com/science/article/pii/S0921344919304653
2. Big data analytics and firm performance: Findings from a mixed-method approach Patrick Mikalef, Maria Boura, George Lekakos, John Krogstie, https://www.sciencedirect.com/science/article/pii/S014829631930061X
3. The role of big data analytics in industrial Internet of Things, Muhammad Habib ur Rehman, Ibrar Yaqoo, Khaled Salah, Muhammad Imran, Prem Prakash Jayaraman, Charith Perera, https://www.sciencedirect.com/science/article/pii/S0167739X18313645

Machine Learning

1. Computer generated images vs. digital photographs: A synergetic feature and classifier combination approach, Eric Tokuda, Helio Pedrini and Anderson Rocha, Elsevier Journal ofVis. Commun, Image R., Vol. 24, 2013, pp. 1276-1292. https://www.sciencedirect.com/science/article/abs/pii/S1047320313001557

2. Very Deep Convolutional Networks for Large-Scale Image Recognition, Karen Simonyan and Andrew Zisserman, https://arxiv.org/pdf/1409.1556.pdf

Cyber security:

1. Cyber Security, Rohit , Anvesh Babu , Ranjith Reddy, Sciendo, HOLISTICA Vol 10, Issue 2, 2019, https://sciendo.com/article/10.2478/hjbpa-2019-0020
2. Detecting cyber threats through social network analysis: short survey, Kirichenko Lyudmyla, Radivilova Tamara, Carlsson Anders, 2017, https://www.researchgate.net/publication/316766488_Detecting_cyber_threats_through_soc ial_network_analysis_short_survey

ADDITIONAL WEB RESOURCES

1. Programming Paradigms
   https://see.stanford.edu/Course/CS107
2. Introduction to Robotics
   https://see.stanford.edu/Course/CS223A
3. Programming Methodology
   https://see.stanford.edu/Course/CS106A
4. Programming Abstractions
   https://see.stanford.edu/Course/CS106B
5. Programming for the Puzzled
   https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-s095-programming- for-the-puzzled-january-iap-2018/
6. Machine Learning
   https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-867-machine- learning-fall-2006/
7. Machine Learning for Healthcare
   https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-s897-machine- learning-for-healthcare-spring-2019/
8. Introduction to Deep Learning
   https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-s191-introduction- to-deep-learning-january-iap-2020/
9. Advanced Data Structures
   https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-851-advanced-data-structures-spring-2012/
10. Kotlin Tutorial
    https://www.w3schools.com/kotlin/index.php
11. Python Programming
    https://www.w3schools.com/python/default.asp
12. Angular JS
    https://www.w3schools.com/angular/default.asp
13. Cyber Security
    https://www.w3schools.com/cybersecurity/index.php
14. Data Scientist
    https://www.codecademy.com/learn/paths/data-science
15. Analyze data with Python
    https://www.codecademy.com/learn/paths/analyze-data-with-python

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SBRR MAHAJANA FIRST GRADE COLLEGE [AUTONOMOUS]

(Accredited by NAAC with 'A' grade)

POST GRADUATION WING

Pooja Bhagavat Memorial Mahajana Education Centre

Affiliated to the University of Mysore

KRS Road, Metagalli, Mysuru-570016

DEPARTMENT OF STUDIES IN COMMERCE

STRUCTURE AND SYLLABUS

2023-24

CHOICE-BASED CREDIT SYSTEM

(TO BE IMPLEMENTED FROM THE ACADEMIC YEAR 2023-2024)

MASTER OF COMMERCE (M.Com)

COURSE STRUCTURE AND SYLLABUS MINIMUM CREDITS REQUIRED FOR M.Com DEGREE

I – IV Semester	Hard Core		Soft Core		Open Elective		Total	
	Total	Credits	Total	Credits	Total	Credits	Total	Credits
	11	44	8	32	1	4	20	80

MINIMUM CREDITS TO BE REGISTERED BY A STUDENT IN A NORMAL PHASE TO SUCCESSFULLY COMPLETE M.COM DEGREE IN IV SEMESTERS

Semesters	Hard Core Course		Soft Core Course		Open Elective Course		Total	
	Total	Credits	Total	Credits	Total	Credits	Total	Credits
I	4	16	1	4			5	20
II	3	12	1	4	1	4	5	20
III	2	8	3	12			5	20
IV	2	8	3	12			5	20
Total	**11**	**44**	**8**	**32**	**1**	**4**	**20**	**80**

I SEMESTER – M.COM

Sl. No.	Title of the Course	Hard Core/ Soft Core/ Open Elective	Number of Credits			
			L	T	P	Total
HC01	Advanced Accounting	HC	3	1	0	**4**
HC02	Financial Management	HC	3	1	0	**4**
HC03	Marketing Management	HC	3	1	0	**4**
HC04	Human Resource Management	HC	3	1	0	**4**
SC01	International Business Environment	SC	3	1	0	**4**
SC02	Statistics for Business Decisions	SC	3	1	0	**4**
SC03	Advanced Auditing	SC	3	1	0	**4**

II SEMESTER – M.COM

Sl.No.	Title of the Course	Hard Core/ Soft Core/ Open Elective	Number of Credits			
			L	T	P	Total
HC05	Organizational Behaviour	HC	3	1	0	**4**
HC06	Corporate Governance	HC	3	1	0	**4**
HC07	International Business	HC	3	1	0	**4**
SC04	Capital Market Instruments	SC	3	1	0	**4**
SC05	Services Marketing	SC	3	1	0	**4**
SC06	Portfolio Management	SC	3	1	0	**4**
SC07	Computer Applications in Commerce	SC	3	1	0	**4**
OE01	Stock Markets and Investment Decisions	OE	3	1	0	**4**
OE02	Management of Enterprises	OE	3	1	0	**4**

III SEMESTER – M.COM

Sl. No.	Title of the Course	Hard Core/ Soft Core/ Open Elective	Number of Credits			
			L	T	P	Total
HC08	Business Research Methods	HC	3	1	0	**4**
HC09	Operations Research	HC	3	1	0	**4**
SC08	Entrepreneurship Development	SC	3	1	0	**4**
SC09	International Human Resource Management	SC	3	1	0	**4**
SC10	International Financial Management	SC	3	1	0	**4**
SC11	Project Management					
SC12	Elective Group A:Business Taxation Paper1:Goods and Services Tax and Customs Duty	SC	3	1	0	**4**
SC13	Elective Group B: Financial Accounting Paper 1: Accounting for Special Transactions	SC	3	1	0	**4**
SC14	Elective Group C: Financial Management Paper1: Corporate Restructuring	SC	3	1	0	**4**

SC015	Elective Group D: Human Resource Management Paper1:Strategic Management of Human Resources	SC	3	1	0	**4**
SC016	Elective Group E:Management Accounting Paper: Marginal Costing and Decision Making	SC	3	1	0	**4**

IV SEMESTER – M.COM

Sl. No.	**Title of the Course**	**Hard Core/ Soft Core/ Open Elective**	**Number of Credits**			
			L	**T**	**P**	**Total**
HC10	International Accounting	HC	3	1	0	**4**
HC11	Strategic Management	HC	3	1	0	**4**
SC17	Foreign Exchange Management	SC	3	1	0	**4**
SC18	Project Work	SC	3	1	0	**4**
SC19	Elective Group A: Business Taxation Paper 2: Corporate Tax Law and Planning	SC	3	1	0	**4**
SC20	Elective Group B: Financial Accounting Paper 2 Contemporary Areas of Financial Accounting	SC	3	1	0	**4**
SC21	Elective Group C: Financial Management Paper 2: Financial Derivatives	SC	3	1	0	**4**
SC22	Elective Group D: Human Resource Management Paper 2: Industrial Relations and Collective Bargaining	SC	3	1	0	**4**
SC23	Elective Group E:Management Accounting Paper 2: Cost Management	SC	3	1	0	**4**

ELECTIVE GROUPS:

Any **TWO groups** from the available electives shall be selected by students at the commencement of the Semester. Once groups have been selected, no change in the selected groups will be allowed later. The department will announce at the end of the

second semester, elective groups which will be offered during III and IV semesters depending on the availability of faculty members and the demand for electives.

MINOR PROJECT WORK:

A student in the fourth semester shall register for a project work that carries 4 credits. The workload for project work and tutorial class is 1 hour per batch of 4 students per week for the teacher. The students shall do field work and library work in the remaining 3 hours per week. Continuous assessment criteria for project work include:

Component-I (C-1): Periodic Progress and Progress Reports 15 Marks

Component-II (C-2): Results of Work and draft report-15 Marks

Component-III (C-3): Final Viva-voce and Project Report Evaluation-70 Marks.

The project Reports evaluation is for 50 Marks and the Viva-voce examination is for 20 Marks

Program Outcomes

PO1: Enhance the in-depth knowledge of various fields of business and commerce such as Accounting, International Accounting, Financial derivatives, Business Environment, international business, Research Methodology, and Tax planning, etc.,

PO2: Provide practical knowledge to deal with the day-to-day activities of the business by using the techniques like an industrial visit, internship, case study analysis, field visit, role play, etc.,

PO3: Inculcate the knowledge of the application of information technology in the field of Commerce.

PO4: Educate the students on business ethics, values, and the responsibility of business towards society to contribute the society at large.

PO5: Encourage the students to develop an interest in Research.

PO6: Build the strong communication skills and interpersonal skills among the students.

PO7: Build team spirit among the students to face the real-life situations in their career.

PO8: Imparting career enhancement skills by providing training in various competitive exams**.**

M.COM SYLLABUS

I SEMESTER

ADVANCED ACCOUNTING

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Description: This course provides detailed insight into Indian accounting standards, Indian Accounting Standards Board, stages and process of standards settings by ICAI in India, Ind AS on general, assets liabilities, impacting and disclosures of financial statements along with compliance and applicability of accounting standards in India.

Pedagogy: Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus on conceptual understanding on Indian accounting standards, Indian Accounting Standard Board and Financial Disclosures and Reporting. Tutorial session helps understand practical aspects of Indian accounting standards.

Course Objectives:
This course will help the students

- To learn concept of Indian Accounting Standards Board and accounting standard setting process.
- To know theoretical and practical concept of Indian accounting standards
- To learn financial disclosures and accounting reporting

Course Contents

Module-1:Accounting Standards: Objectives, Benefits, Scope-Accounting Bodies-International Accounting Standards Board- Institute of Chartered Accountants of India-Accounting Standards Boards (IASB)- Financial Accounting Standards Board's (FASB)-Stages and Process of Standards settings in India- Accounting Standards issued by ICAI-Compliance and Applicability of Accounting Standards in India.

Module-2: Ind AS on General and Assets of Financial Statements: AS 1Presentation of Financial Statement-AS 2 Inventories- AS 7 Statement of Cash Flow- AS 8 Disclosure-AS 11 Construction Contracts- - AS 16 Property Plant and Equipment- AS 17 Lease- - AS 23 Borrowing Cost-.AS 36 Impairments of Assets-AS 38 Intangible Assets

Module-3: Ind AS on Liabilities, Impacting and Disclosures in Financial statement: AS 12 Income Taxes- AS 19 Employee Benefits- AS 21 The Effects of Changes in Foreign Exchange Rates-AS 33 Earnings Per Share.

Module-4:Financial Disclosures and Reporting: Objectives and Concepts-Developments on Financial Reporting Objectives- True Blood Report - Stamp Report-Corporate Annual Report-Segment Reporting and Interim Financial Reporting. Role of ICAI and MCA in Accounting.

Skill Development

- Select any two accounting standards and prepare detailed report by considering theoretical and practical aspect the selected standard**.**

Visit any organisation, prepare financial disclosures and accounting report based on Indian accounting standards.

Course Outcome:

CO1: Provides detailed insight into various Indian accounting standards

CO2: Stages and process of standards settings by ICAI in India along with compliance and applicability of accounting standards in India.

CO3: Understand the difference between Accounting Standard, IFRS, IASB and FASB and also gain knowledge on Convergence of Indian Accounting Standards with IFRS

CO4: Understand financial disclosures and preparation of accounting reporting.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	-	-	-	-	-
CO2	3	3	-	1	1	-	-	-
CO3	3	2	-	-	-	-	-	-
CO4	3	3	-	-	1	-	-	-
Weighted Average	**3**	**2.25**	-	**0.25**	**0.5**	-	-	-

References

Indian Accounting Standards- Asish K Bhattacharjee- Tata Mc Graw Hill.

Taxman Accounting Standards- Rawat D S-Taxmann Publication

Accounting Standards- Vijaya kumar M.P -Snow White Publication Corporate Financial Reporting Theory and Practice - Jawaharlal- Taxman Publication

HC02: FINANCIAL MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

1. Course Description:

Financial management making assumes greater importance in maximizing value of an organization. This course is designed to focus on the analysis of three crucial long-term financial decisions -

(1) Cash flow measurement,

(2) Capital budgeting,

(3) Cost of capital and,

(4) Capital Structure. Risk analysis of capital budgeting decision is added as a special top

2. Course Objectives:

- To understand the various uses of finance.
- To familiarize oneself with the techniques used in financial management.
- To point out the importance of capital budgeting techniques in project evaluation.
- To describe the risk and uncertainty incorporated methods of project evaluation.
- To understand the importance and implications of various methods of measuring cost of capital.
- To understand and appreciate the risk and return implication of leverages.

3. Pedagogy:

Students to work out detailed case studies involving the application of various criteria for project selection including risk analysis of capital projects. Analysis of leverage and dividend polices should be based on a sample of leading corporate organizations such as SENSEX companies, followed by seminar presentations and group discussions.

4. Course Contents:

Module 1: Capital Structures Theories: Traditional view vs MM hypothesis, MM position I &II - Capital structure designing in practice – EBIT- EPS analysis - the pecking

order theory - Factors impacting leverage decision. Contemporary issues and challenges in Financial Management.

Module 2: Cost of Capital: Long-term financing, Public issue of debt, Preferred stock and Common stock, Term loans - Cost of equity – Cost of preferred capital - Cost of debt- Cost of retained earnings – WACC- Marginal cost of capital - The CAPM approach - Adjusting WACC for risk.

Module 3: **Risk Analysis in Capital Budgeting**: Inflation in capital budgeting - real vs. nominal discount rates. Approaches to risk absorption - Expected Net Present Value (ENPV) - Payback method - Risk-Adjusted Discount rate - Use of Normal Distributions - Sensitivity analysis - Measurement of Project Risk- Risk analysis of Project Portfolios.

Module 4: **Capital Budgeting and Dividend Policy**: Importance – Challenges dependence and independence of cash flows in evaluating projects - Measures of risk and returns - NCF estimation DCF Techniques NPV vs. IRR Conflicts - Fisher's rate of intersection - Multiple IRRs – MIRR – Capital Rationing – Relevance and Irrelevance Dividend Policy Theories.

Skill Development:

- Preparation of project proposal with budget and cash flow analysis.
- Collection of financial reports and analysis of capital structure.
- Visit financial and non-banking financial institutions to identify sources and cost of funds.

Course Outcome:

CO1: Know the relativity of capital investment decisions and financial Policies to business valuations.

CO2: Application of different methods of cost of capital to ascertain the overall cost of capital of the firm,

CO3: Application of financial leverage to form long-term financial policies for business.

CO4: Ascertain common investment criteria and project cash flows with associated corporate project evaluation.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	3	-	3	-	-	-
CO2	3	3	3	-	3	-	-	-

CO3	3	3	-	1	3	-	-	-
CO4	3	3	3	-	3	-	-	-

References:

1. Financial Management and Policy: Van Horn; Prentice Hall of India.
2. Fundamentals of Financial Management: Brigaham& Houston, Thomson Learning, Bombay.
3. Principles of Corporate Finance: Richard Brealey and Stewart Myers, Tata McGraw Hill, 2000.
4. Financial Management and Policy: Text and Cases: V K Bhalla, Annual Publishers, 2002.
5. Financial Management: Chandra, Prasanna; TMH, NewDelhi.
6. Capital Budgeting: Dr. G. Kotreshwar, Chandana Publications (2014),Mysore

SC 03: MARKETING MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 Per Week

1. Course Descriptions:

This course provides coverage of the concept of marketing, marketing concepts, marketing planning, market segmentation, online marketing etc.

2. Course Objective:

The objective of this course is to provide the student the knowledge about marketing and its significance and managing them in organizations.

3. Pedagogy:

The teaching method comprises lecture sessions and tutorials. Lecture sessions focus on providing conceptual understanding and analytical setting for select aspects of the course contents, field visits conducting market surveys.

4. Course Contents:

Module 1: Marketing Concepts and Tools: Introduction to Marketing-- Evaluation of marketing concepts and its stages – objectives of marketing –Scope of marketing - Core concepts of marketing — Building Customer Satisfaction, Value and Retention. Understanding the Value Philosophy -Direct Marketing Vis-À-Vis Digital Marketing: Online Marketing – Advantages and Dis-Advantages of Direct Marketing and Online Marketing -Major channels of Direct Marketing – Marketing in 21st century –E-Commerce- Case studies.

Module 2: Marketing Environment: Scanning of marketing environment **-** Analysis of

needs and trends in macro and the microenvironment –classification of macro environment- classification of micro environmental factors. Global Marketing Environment and Global Marketing Economy - Marketing environment of India - Marketing Intelligence system - Marketing Research system-- Case studies.

Module 3: Market-oriented Strategic Planning - Corporate and Division Strategic Planning – Business Strategic Planning - Elements of Marketing Mix Strategy - Price or Differentiation Oriented Strategies - Stages of New Product Development- - Case Studies.

Module 4: Developing Marketing Strategies - Product Life Cycle -Marketing Strategies - Designing Competitive Strategies - Differentiation tools, - Positioning Strategy - Positioning the product - Product line Decisions - Brand Decisions - Pricing Decisions - Promotion Decisions and Channel Decisions- - Case studies.

Skill Development:

- Conduct a survey on customer satisfaction towards any company products.
- Analyze and submit a report on any five company pricing strategies.
- Students collect data relevant to the marketing mix strategies of an organization.

Course Outcomes:

CO: Learn the Importance of how Demographic, Cultural and Institutional factors Shape the Global Marketing Environment

CO2: Depict Various Methods through which a firm can promote Its products in markets and be able to make All the necessary decisions needed for promoting the product in markets.

CO3: Develop Self-Leadership Strategies to Enhance Personal and Professional Effectiveness.

CO4 Figure Out the Implications of Current Trends in Social Media Marketing and Emerging Marketing Trends.

CO5: Portray decisions related to designing channel as well as physical distribution systems for making available the products in the markets.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	2		3	-	-	-
CO2	3	3	-	-	-	-	-	-

CO3	-	-	-	-	-	3	3	-
CO4	2	3	3	-	-	-	-	-
CO5	-	3	-	-	-	-	-	-
Weighted Average	**1.6**	**2.4**	**1**	-	**0.6**	**0.6**	**0.6**	-

References:

1. Marketing Management - Philip Kotler, PHI, New Delhi.
2. Marketing Management - Rajan Saxena, , TMH, New Delhi.
3. Fundamental s of Marketing - Stanton, , TMH, New Delhi.
4. Gandhi, Marketing: A Managerial introduction, TMH, New Delhi,
   Marketing:
   Paul Baines, Chris Fill and Kelly Page, Oxford University Press, 2nd Edition, 2011.
5. William Stanton, Fundamentals of Marketing, TMH, New Delhi.
6. Ramaswamy and Namakumari, Marketing Management, Macmillan, Delhi.
7. J S Panwar, Marketing in the New Era, Response Books, Delhi.
8. Majare, The Essence of Marketing, PHI, New Delhi.
9. Paul Peter and James H Donnelly, Marketing Management, TMH, New Delhi.
10. Mulins, Marketing Management, TMH, New Delhi.

HC 04: HUMAN RESOURCE MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

1. **Course Descriptions:** This course provides the coverage of concept of HRM, Human resources planning and procurement, human resource development and compensational and rewards system.

2. **Course Objective:**

The objective of this course is to provide the student the knowledge about human resources, their significance and managing them in organizations.

3. **Pedagogy:**

Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus on

providing conceptual understanding and analytical setting for select aspects of the course content.

4. Course Contents:

Module 1: Introduction: Human resource management – concepts - significance – objectives – scope – functions – changing role of Human Resource Manager - Need for studying HRM – Emerging trends in HRM - Human Resource Development (HRD) concept – scope – objectives - HRD techniques.

Module2:Human Resources Planning and Procurement; Human resource planning - Importance – objectives - factors affecting HRP – requisites for successful HRP- Job analysis – methods - Purposes – Job description – Job specification - Job evaluation – Process and methods of Job evaluation - Job design approaches and process of Job design - factors affecting Job design, Recruitment – source of recruitment – factors governing recruitments, and recruitment process. Selection - process –interview

Module3: Human Resource Development: Meaning-concepts of HRD - Objectives of training-organization of training programme – methods - advantages and limitation soft raining and development- Evaluation of training programme – HRD for total quality management - Transfer policy - Promotion policy and Transfer. Demotion and Discipline-consequences of indiscipline – disciplinary Procedure - Career Planning and Development. Case studies

Module 4: Compensation/Rewards System: Significance of reward system in business organization. Employee motivation; Compensation system in practice - systems of promoting -factors determining employee compensation and rewards-dearness allowance - employee benefits-bonus - laws on wages, bonus and social Security - managerial compensation. Performance Appraisal: concepts - objectives philosophy and process of performance appraisal system - 360 Degree performance appraisal system. E – HRM, Big data and HR Analytics, Artificial Intelligence Core and HRM Practices.HR Practices in Sunrise sector. Case studies.

Skill Development:

- Visit an organization and learn HR policies
- Visit an organization and collect data on the methods of performance appraisal adopted by that organization
- Visit an organization and collect data on the training need and analysis.

Course Outcome:

CO1: Understanding of the concept, functions and process of human Resource management.
CO2: Provide practical knowledge on preparation of job description and job

specification.

CO3: Enhance the practical knowledge on human resource planning in an organization.

CO4: Design and formulate various HRM processes such as Recruitment, Selection, Training, Development, Performance appraisals.

CO5: Understanding of compensation and reward system adopted in an organization.

CO6: Understanding the adoption of E-HRM practices in an organization.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	-	-	2	-	-	-	-
CO2	1	3	-	-	-	-	-	-
CO3	1	3	-	-	-	-	-	-
CO4	2	3	-			2		2
CO5	3	3	-	-	-	-	-	-
CO6	2	-	2	-	-	-	-	-
Weighted Average	**2**	**2**	**0.33**	**0.33**	-	**0.33**	-	**0.33**

References:

1. Human Resource Management: Strategies and Action-Armstrong
2. Human Resource Management - Dr.Ashwathappa
   Personnel and Human Resource Management -D.A. Deonz and F.P. Robins
3. Personnel Management – Edwin Phillip
4. Human Resources Management—L.M. Prasad

SC01: INTERNATIONAL BUSINESS ENVIRONMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

1. Course Description:

This course provides the coverage of international business as a social system, internal and external environment, international business ethics, and social responsibility.

2. Course objectives:

- To understand the knowledge about International Business Environment.

- To analyze the various factors influencing in international business environment.
- To learn the contribution of International Trade and Investment theories.
- To study International Investment recent trends.
- To understand importance of international business environment and business social responsibility.

3. Pedagogy:

Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus on providing conceptual understanding and analytical setting for select aspects of the course content.

4. Course Contents:

Module 1: An Overview of International Business Environment: Business in a social system; Concept and Nature and Significance of business environment - Need to study Business Environment - Elements of Business Environment- Internal Environment and External Environment- Economic- political-socio-cultural-Technological environment; Environmental analysis–Techniques Government - Business Interface - Changing Dimensions of Indian Business – Case studies.

Module 2: International Trade and Investment Theory: Historical developments of Modern Trade theory – Investment theories – Theory of capital movements – Market imperfections – Internationalization – Appropriability –Location specific advantage – eclectic. Transnational Corporations: Introduction to TNCs, Features of TNCs, Why Firms Become Transnational? Theories Explaining Emergence of TNCs in World Economy, Recent Trends in TNCs, Issues and Controversies, The Indian Perspectives, – Case studies.

Module 3: International Investment: Introduction to international investment, Nature and Significance of foreign investment, Types of International Investment, Factors affecting international Investment - FDI and Developing Countries - Advantages – Limitations - Recent Trends in FDI Flows - Sectoral Distribution of FDI- Cross-Border Mergers and Acquisitions, Trade Related Investment Measures (TRIMS), Multilateral Investment Agreement (MIA), Foreign Investment in India.– The New Policy – EURO/ADR issues – M & A – Indian companies going global – Case studies.

Module 4: International Business ethics and Social Responsibility: Introduction to the Concept of Ethics, Approaches to Ethical Management, Frameworks for Resolving Ethical Dilemmas, Ethics and International Management, Ethical Systems of Belief,

Foreign Corrupt Practices Act of USA, Ethical Issues in International Trade - Ethical vs. Unethical Activities- Code of Ethics for International Marketing. Business and Social Responsibility - Areas of Social Responsibility - Approaches to Social Responsibility- Institutionalizing Social Responsibility – Case studies.

5. Skill Development:

- Student's visit MNCsand collect data related to FDI investments for past five years.
- Students conduct interview and gather information related to Organizational business ethics and CSR activities conducted for the past few years.

6. Course Outcomes:

CO1. Learn the dynamics of the international business environment from a competitive and economic perspective.

CO2. Depict the various provisions relating to international trade and investment theories, and Transnational Corporations and its recent trends in TNCs.

CO3. Know about the international investments and recent trends in FDI Flows.

CO4. Outline the International business ethics and International Management.

CO5. Portray the approaches towards social responsibility and institutionalizing social responsibility.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	-	-	-	-	-
CO2	2	3	-	-	1	-	-	-
CO3	2	3	-	-	2	-	-	-
CO4	2	-	-	3	1	-	-	-
CO5	1	2	-	3	2	-	-	-
Weighted Average	2	2	-	1.2	1.2	-	-	-

References:

1.Adhikary, Manab, GLOBAL BUSINESS MANAGEMENT, *Macmillan*, New Delhi.

2.Aswathappa, INTERNATIONAL BUSINESS, *Tata Mc Graw Hill publications*, New Delhi.

3.Bhattacharya.B, GOING INTERNATIONAL RESPONSE STRATEGIES FOR INDIAN SECTOR, *Wheeler Publishing Co*, New Delhi.

4. Black and Sundaram, INTERNATIONAL BUSINESS ENVIRONMENT, *Prentice Hall of India*, New Delhi.

5.Gosh, Biswanath, ECONOMIC ENVIRONMENT OF BUSINESS, *South Asia Book*, New Delhi.

6. P.Subba Rao, International Business Environment, Himalaya Publishing House, Mumbai.

7. Francis Cherunilam, International Business Environment, Himalaya Publishing House, Mumbai.

SC 02: STATISTICS FOR BUSINESS DECISIONS

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours:5 per week**

1. Course Description:

The course comprises of probability theories, sampling techniques, time series analysis and multivariate analysis.

2. Course Objectives:

The aim of this course is to enable a student to have knowledge about application of time series analysis, probability theory and sampling in different areas of commerce, Testing of Hypothesis and application of multiple correlation and regression analysis.

3. Pedagogy:

Class room teaching of basic statistical models shall be followed by solving problems involving business applications. Assigned problems are to be worked on an individual basis, followed by group discussion of case problems.

4. Course Contents:

Module 1: Time Series Analysis: Methods in time series – Cyclical - seasonal and regular variations; Trend analysis - Application of time series analysis forecasting- Measure of Trend - Method of least squares, Moving Averages and Measure of seasonal Indices - case studies.

Module 2: Probability Theory and Theoretical Distributions: Meaning – terminology -addition and multiplication theorem- types and rules - Random variables and use of expected value in decision making- Theoretical Distribution - Binomial, Poisson and Normal probability distributions- characteristics-properties- their applications in business decisions, case studies

Module 3: Sampling: Meaning of sample and population – Probability and non-probability sampling techniques – Census vs sampling-sampling principles-- Sampling from normal and non- normal populations – The Central limit theorem - Use of sampling in business decisions-sampling errors.

a. Testing of hypothesis Small and Large sample Tests - Statistical Inference: Estimation and test of hypothesis: Finite and infinite population, Random sample, parameter, statistic, sampling distribution of statistic, standard error and its utility. Estimation: Point and interval estimates, meaning of confidence interval. Statistical Hypothesis, null and alternative, simple and composite hypotheses, sample selection, sample space, parameter space, critical region, two types of errors, level of significance and size of a test, power of a test, one-tailed and two-tailed tests.

b. Parametric Tests:

Sampling distribution – student t- distributions – z-test properties- F-Test - and their applicability in business.

c. Non-Parametric Tests:

Chi-square test for single variance, testing goodness of fit and Independence of attributes in (2*2) contingency tables, Yates' correction for continuity. Mann-Whitney U-Test, Kruskal -Wallis Test, Sign Test

d. Small and Large Sample tests

Tests for single mean, equality of two means, single proportion and equality of two proportions.

Module: 4 ANOVA and Report Writing Statistical Analysis: Bi-variate Analysis Multivariate Analysis - ANOVA: One- Way and Two-Way Classification - Technology in research. Test of significance - Editing, Coding, Classification, Tabulation, Validation Analysis and Interpretation. Report writing and presentation of results: Importance of report writing, types of research report, report structure, guidelines for effective documentation. Case studies.

Skill Development

1. Development and testing of hypothesis based on sample size.
2. Data analysis using SPSS.
3. Financial data interpretation and modeling using advanced excel tools.
4. Collect primary data and apply descriptive statistics.

Course Outcomes

CO 1 : Development of logical reasoning ability in students.

CO 2 : Knowledge about the applicability of various parametric and non-parametric tests for analysis of data.

CO 3 : Ability to use SPSS to solve statistical problems.

CO 4 : Ability to make decisions under uncertain business situations through analysis.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	2	3	-	-	-	-	-	3
CO2	1	1	2	-	3	-	-	-
CO3	1	2	3	-	3	-	-	3
CO4	-	2	-	-	3	-	-	-
Weighted Average	**1**	**2**	**1.25**	-	**2.25**	-	-	**1.5**

References:

1. Statistics: Sanchetti and Kapoor
2. Research Methodologyu- C R Kothari & Gaurav Garg
3. Statistics for Management: Richard Livin and DavidRobin
4. Fundamentals of statistics- S C Gupta
5. Statistics Theory and Practice- R S N Pillai, Bagavathi

SC03: ADVANCED AUDITING

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours:5 per week**

1. Course Description:

This paper is to educate the present Indian auditing practices, conceptual understanding, and different terminologies and comparisons with International Auditing practices. To know leading & top Auditing Firms and its importance, to learn auditing and digitalization, Indian Standards on Auditing (SA), major scams in India and its impact on economy of the Country.

2. Course Objectives:

- After completion of the course the students should capable with:

- To know the importance of auditing with different accounting practices.
- To compare the national auditing practices with international auditing principles.
- To have a detailed knowledge on different Auditing Standards and its uses.
- To know audit regulation and laws of various entity.

3. Pedagogy:

The course content is covered class room lecture, students' interaction/seminar, case discussion, major scams and work out the practical insight of auditing issues, challenges as an auditor and also visiting companies for practical exposure. Practical Works: Auditing, Standards, Practice Manuals, Leading and pending cases on auditing issues, on-line auditing methods, proper scrutiny and verification of accounting for best auditing practices.

4. Course Contents:

Module 1: Auditing Concepts: Nature- Objective -Scope of Audit; Relationship of Auditing with Other Disciplines Auditing Standard-Setting Process -Role of International Auditing and Assurance Standards Board (IAASB) and Auditing and Assurance Standards Board (AASB).

Module 2: Auditing Standards and Audit Procedures-audit planning**-** Quality Control for an Audit of Financial Statements- SA 300 Audit Planning and Risk Assessment-Risk Assessment and Control -Audit Risk Components- Companies Auditors Report Order 2020 (CARO 2020)-Audit Committee and Corporate Governance- Consolidated Financial Statement.

Module-3: Audit Reports - Basic Elements -SA 700 Forming an Opinion and Reporting on Financial Statement- Types of Modified Opinion- Circumstances When a Modification to the Auditor's Opinion is Required- Qualified- Adverse-Disclaimer of Opinion -SA 705 Modification to the Opinion in the Independent Auditor's Report- SA 706 Emphasis of Matter Paragraphs and Other Matter Paragraphs in the Independent Auditor's Report- Nature of Comparative Information; Corresponding Figure; Comparative Financial Statements -SA 710 Comparative Information - Corresponding Figures and Comparative Financial Statements.

Module: 4: Audit Regulation and Laws – Due Diligence- Investigation -Forensic Audit- Peer and Quality Review - Professional Ethics—Audit-Related Penalties - Imprisonment and Prosecution - Rethinking of Audit - Auditing Software - Case Studies - Kingston Cotton Mill Company 1896 – Sahara and Subratha Rai -Case Studies.

Skill Development:

Evaluate effect of forensic audit on the profitability of select consumer goods manufacturing industries

Select any five companies and analyze role of internal audit in managing corporate governance

Course Outcomes

CO-1: Knowing the Indian Auditing Standards and Audit Procedures.

CO-2: Learning the auditing practice of different sectors.

CO-3: Preparation of audit report as per CARO 2016.

CO-4: Practice of audit through online.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	-	-	2	-	-	-	-
CO2	3	3	-	-	-	-	-	-
CO3	-	3	-	-	-	3	-	-
CO4	-	3	2	-	-	-	-	-
Weighted Average	**1.5**	**2.25**	**0.5**	**0.5**	-	**0.75**	-	-

References:

1. Advanced Auditing & Professional Ethics- By CA Pankaj Garg-Taxmann Publication
2. Advanced Auditing-Surabhi Bansal-Best word's Publication
3. Advanced Auditing- CA G Shekar- Padhuks's Publication
4. Advanced Auditing & Professional Ethics-Abhishek Bansal-Commercial Law Publication Pvt. Ltd.

II SEMESTER

HC05: ORGANISATIONAL BEHAVIOUR

Total Credits:4 Credit Pattern:3:1:0 No of hours:5 per week

1. Course Description:

This course provides the coverage of scope of OB, different contributing discipline to OB, foundational of individual behavior, motivational theories and foundations of group behavior.

2. Course Objectives:

Course is to provide the knowledge about organizations structure, design, and culture, their constitution, motivational theories and the behviour of individual and group members in organizations.

3. Pedagogy:

Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus on providing conceptual understanding and analytical setting for select aspects of the course content.

4. Course Contents:

Module1: Introduction: Meaning-Definitions and scope of organizational behavior – Fundamental Concepts of OB - Key elements of OB- people, Organizational structure, technology and environment; Historical development of Organizational Behavior-Model of Organizational Behavior. Contributing Disciplines to OB-Psychology-Sociology-social psychology- Anthropology- Political science; OB and Management-Comparative roles in organization;- Organizational structure Designs and Culture -Formal and Informal organization - Case studies.

Module 2: Foundations of Individual Behavior: Personal factors, Psychological factors - Organizational factors, Environmental factors - Personality - Personality determinants- personality traits-Theories of Personality – Authoritarianism - Locus of Control – Machiavellianism - Introversion and Extroversion - Achievement Orientation - Self- Esteem - Risk-taking, Self-Monitoring.- Learning – Theories of learning - Perception- meaning and definition, factors influencing perception – Attitudes - formation of attitudes, changing attitudes, attitudes and Job satisfaction – Values - Importance of Values - Sources of Values - Case studies.

Module 3: Motivation: The concept of Motivation - Early Theories of Motivation - Hierarchy of Needs theory - theory X and Theory Y; Hygiene theory; contemporary theories of motivation-ERG Theory-three needs theory - cognitive evaluation theory and others - Work stress - sources of stress - Stress Management – Case studies.

Module 4: Foundations of Group Behavior: Defining and classifying groups-group

process-group tasks-cohesive groups - group dynamics -Leadership-nature and importance- functions styles - Communication: Nature and Types - Effective communication - Roles of Formal and Informal communication - Conflict management - The process of conflict - Types of conflict - Functional and Dysfunctional conflict - Resolution of conflict - Case studies.

Skill Development:

- Visit a business organization and collect data on factors that influence on employee motivation.
- Study the conflict resolution procedure in an organization.

Course Outcomes:

CO1. Comprehend the conceptual frame work of management and Organizational behavior

CO2. Understanding the complexities associated with management of individual behavior and group behavior in the organization.

CO3. Application of various motivational theories in anchoring the behaviour of employees in an organization

CO4. Apply creative, critical and reflective thinking to address organizational opportunities and challenges.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	-	-	-	-	-
CO2	2	3	-	-	-	-	3	-
CO3	2	3	-	-	-	3	2	-
CO4	2	3	-	-	-	2	3	2
Weighted Average	**2.25**	**2.75**	**-**	**-**	**-**	**1.25**	**2**	**0.5**

References:

1. Organisational Behaviour – Fred Luthans
2. Organisation Theory and Behaviour - V S P Rao and P S Narayana
3. Organisational Behaviour – K. Aswathappa
4. Human Behaviour at Work – Keith Devis

5. Organisational Theory and Behaviour- R. A. Sharma

6. Organisational Psychology – Schein, E.H.

HC06: CORPORATE GOVERNANCE

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 Per Week

Course Description:

The course provides coverage of concept of corporate governance, Business ethics, Corporate Social Responsibility and corporate governance in India and reforming of BOD and different Committees.

Course Objectives:

This course aims to, Enable the students to understand the concept of corporate Governance

1. Help the students to know about Corporate Ethics and Cultural Influences
2. Acquire knowledge of Corporate Social Responsibility and Accountability
3. Gain information about the Corporate Governance Reforming Committee Reports in India

Pedagogy:

The subject matter will be presented through lectures, class discussions, student presentations, Guest lectures, and laboratory experiences.

1. Course Contents:

Module 1: Concept of Corporate Governance: Introduction to Corporate Governance, Its Importance - OECD Principles of Corporate Governance, Need for good Corporate Governance - Theories of corporate governance, Agency theory and Stewardship theory - Corporate Governance Models –US/UK model, European model, and Japanese Model. Evolution and growth of Corporate Governance in India- Case studies.

Module 2: Corporate Management and Functions of Board Committees: Management vs. Governance - Internal Constituents of the Corporate Governance - Key Managerial Personnel (KMP); Chairman - Qualities of a Chairman – Powers - Responsibilities and Duties of a Chairman - Chief Executive Officer (CEO) - Role and Responsibilities of the CEO - Separation of roles of chairman and CEO - CFO – Manager - Company Secretary – Auditor. Statutory Committees of Board- Audit Committee, Remuneration Committee - Nomination Committee - Compliance Committee - Shareholders Grievance Committee - Investor's Relation Committee - Investment

Committee - Risk Management Committee – Other Committees. Case studies.

Module 3: Regulatory Framework of Corporate Governance: Corporate Governance Committees - Cadbury Committee on Corporate Governance, 1992 - Sarbanes-Oxley Act, 2002 - Kumar Mangalam Birla Committee, 1999 - Naresh Chandra Committee Report, 2002 - Narayana Murthy committee Report, 2003, Dr. J. J. Irani Committee 2005 (Only highlights of committee reports)- Report on Company Law - SEBI guidelines and clause 49 - reforms in the Companies Act; whistle blowing - whistleblower policy - Case studies.

Module 4: Business Ethics and Corporate Social Responsibilities: Concept – Importance - Principles of Business ethics - Benefits of Corporate Ethics - Arguments for and Against Business Ethics - Techniques to improve Ethical Conduct of Business - Ethics in functional areas of Business-Marketing - HRM - Accounting and Auditing - Finance etc., Corporate Social Responsibility: Meaning - CSR models **-** Corporate Social Challenges - Corporate Accountability - Business And Ecology - Sustainability Reporting - Case Studies.

Skill Development

- Visit an organization and collect data on the vision, Mission, and objectives of the organization, code of conduct, and values practiced in an organization.

- Visit an organization and collect information on CSR activities by conducting the interview.

COURSE OUTCOME:

CO1: Know the Conceptual framework of Corporate Governance around the world and in India,

CO2: Enhancing the Knowledge on Ethics in Business and the Code of Conduct practiced in various Corporations.

CO3: Learn the efforts of governments and various committees in enacting good governance systems in Indian Corporations,

CO4: Realize the roles and responsibilities of CEO, CFO, Company Secretary and other key managerial personnel

CO5: Identify and understand the various Corporate Social Responsibility activities taken up by the Indian corporate sector.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	3	-	-	-	-
CO2	3	2	-	3	-	-	2	-
CO3	3	-	-	-	-	-	-	-
CO4	3	2	-	2	-	-	-	-
CO5	2	1	-	3	-	-	-	-
Weighted Average	**2.8**	**1.4**	-	**2.2**	-	-	**0.4**	-

References:

1. Business ethics by L.P. Hartman, Tata Mc Grawhill.
2. Business ethics by W.H.Shaw-(Thomson)7
3. Corporate management and Accountability by L.C. Gupta (McMillan
4. Institute for FM and Research, Chennai-1974)
5. Strategic Management by Hill, Ireland and Horkisson(Thomson)
6. Business and society by Keith Davis (Mc GrawHill)
7. Corporate Governance by Kenneth Kim, John R. Nofsinger, Derek J
8. Mohr, 2010 3/E, Prentice Hall.
9. N Balasubramaniam, Corporate Boards and Governance, Sterling
10. Publishers, New Delhi.
11. A C Fernando, Corporate Governance – Principles, Policies and Practices,
12. Pearson Education, New Delhi.
13. Jayati Sarkar and Subrata Sarkar, Corporate Governance in India, Sage
14. Publications, New Delhi.
15. Subash Chandra Das, Corporate Governance in India, PHI, New Delhi.

HC07: INTERNATIONAL BUSINESS

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

1. Course Description:

This course provides the coverage of international marketing, international trade, international global sourcing, international business environment, multinational corporations and India in the global setting.

2. Course Objectives:

- To understand differentiation between domestic and international trade practices.
- To analyze various factors influencing international trade.
- To learn the contribution and role of GATT, WTO efforts in regulating international trade.
- To study economic integrations role in protecting domestic companies.
- To understand the implication of globalization on emerging economies.

3. Pedagogy:

The course would be taught under LTP method. The lecture sessions are designed to be interactive with the student expected to come prepared with basic reading suggested before every session. The tutorial sessions are basically group exercises with each designated group handling a prescribed module for presentation and interaction, in a three- way interactive process. It basically involves preparing field reports and presenting them for plenary discussions.

4. Course Contents*:*

Module 1: Introduction: Nature of International Business-players in International Business- Approaches and need for international Business, International Trade Theories. International Marketing-Trends in International Trade - Reasons for Going International - Global Sourcing and Production Sharing-International Orientations Internationalization Stages and Orientations-Growing Economic Power of Developing Countries-International Business Decision - Case Studies.

Module 2: Regional Trade Blocks: Trading Environment-Commodity Agreements – Unilateral, Bilateral and multilateral stages of Economic integration, Castes - State Trading and Growing Intra-Regional Trade - Other Regional Groupings - GATT / WTO - The Uruguay Round Evaluation – UNCTAI – EFTA – LAFTA – EU – SAARC - World Bank - IMF and other trading blocks and common marketing for international business – case studies.

Module 3: Multinational Corporations: Definition -Organizational Structures - The Role of MNC's and Dominance of MNC's - India as a player in the International market place – its position and prospects - FDI & FII's in India - Code of Conduct - Multinationals in India - Case Studies.

Module 4: India in the global setting and globalization of Indian business: India an Emerging Market-India in the Global Trade- Liberalization and Integration with Global Economy - Foreign Trade Policy 2015-20 - Regulation and Promotion of Foreign Trade in India - Export promotion- Organizational set-up - incentives – EOUs - EPZs and SEZs - export houses and trading houses - an evaluation-One Borderone Road, - Case studies.

Course Outcome:

CO1: Identify the key aspects of international trade and calculate its potential gains to participating nations.

CO2: Recognize the characteristics of foreign exchange markets

CO3: Identify the different countries currency regimes around the world.

CO4: Evaluate cross-border investment opportunities, and describe a multinational firm's decision-making process

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	-	2	-	-	-
CO2	3	2	-	-	-	-	-	1
CO3	2	3	-	-	2	-	-	
CO4	2	3	-	-	3	-	-	-
Weighted Average	**2.5**	**2.5**	-	-	**1.75**	-	-	**0.25**

References:

1. WTO and Indian Economy:Chadha.G.K
2. International Business: New Trends:G.S.Batra&R.C.Dangwal
3. Global Marketing Strategies: Jean Pierre&H.DavidHennessay
4. International Marketing – SakOnkvisit and John J.Shaw
5. International Marketing – Philip Cateora and JohnGraham
6. International Business – By Roger Bonnet
7. International Business – Michael Zinkata
8. International Business – Johnd.Daniels
9. International Business – Richard M.Shaffer
10. Restless Continent – Michael Wesley

SC 04: CAPITAL MARKET INSTRUMENTS

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

1. Course Description:

Capital markets in recent times are flooded with new and innovative instruments enhancing vibrancy and volume of capital markets. Every advanced programme in commerce should consist of a course in analysis and evaluation of various instruments traded in capital markets today.

2. Course Objectives:

- To understand about the capital market, its operations and various instruments for investment
- To evaluate various financial instruments like stock, bond and debentures
- To understand various concepts and terminologies used in derivatives.
- To evaluate various financial derivatives such as forwards, futures, options, financial swaps, credit derivatives etc.

3. Pedagogy:

Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus on providing conceptual understanding and analytical setting for select aspects of the course content. Tutorials include writing of assignments, Case study discussions, and seminar presentations.

4.Course Contents:

Module 1: Introduction to Capital Market - Structure of Indian Financial Markets- Money Market -Instruments- Capital Market - Instruments- Innovations in capital markets- Angel Investors, Venture capital ,Unit Linked Insurance Plans, IPO issue- Book building process, Contemporary issues and challenges in Fixed Income security market, case studies.

Module 2: Valuations – Valuation of Stocks - Dividends Growth Model - Variable growth model – Bonds-valuation-YTC, YTM, duration of bond-Debentures – Types - Convertible Debentures. Global financial instruments-ADRs - GDRs – IDRs-Basic features – Benefits to issuing Company- ETFs - Meaning and Importance

Module 3: Derivatives – Origin - growth and Types of Derivatives – Benefits of Derivatives Market – Forwards and Futures – Difference- Basic Features – Classification of Futures- Pricing of Forwards and Futures-Margins – Hedging Using Futures Contract-concept of M2M.

Module 4: Options and Swaps – History- Types of options- - Options payoff Diagrams - Options Market in India – Swaps – Meaning – Currency Swaps – Interest Rate Swaps.

Skill Development

- Visit brokerage firms and list out new investment avenues.
- Determination of Intrinsic value of stocks with market data.

- Online trading in derivatives using futures and options.
- Collect contract specifications of different underlying assets.

5. Course Outcomes:

CO-1: learning conceptual and practical knowledge on Capital market and its operations in India

CO-2: Valuation of financial securities like bond, debenture and stocks.

CO-3: Mechanism and application of forwards/futures, options, financial swaps.

CO-4: Learn online trading mechanism of derivatives instruments.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	-	-	-	-	-	-
CO2	1	3	2	-	3	-	-	-
CO3	3	3	-	-	2	-	-	-
CO4		3	3	-		-	-	3
Weighted Average	**1.75**	**3**	**1.25**	-	**1.25**	-	-	**0.75**

References

1. Capital Market Instruments – By G. Kotreshwar, Chandana Publications (2014),Mysore

2. Financial Derivatives – By G.Kotreshwar, Chandana Publications (2014),Mysore

3. Derivatives and Risk Management- Dr.R.P. Rustagi

SC 05: SERVICES MARKETING

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours: 5 per week**

1. Course Description:

The role of services has grown to an unprecedented level today. Every company, whether it is a manufacturing company or a product selling company, is dependent on the services for one thing or the other. The services provided by companies in the marketplace are also

the factors which differentiate them from their competitors. So, it is vital for the commerce students to learn about the service marketing prevailing in today's scenario.

2. Course Objectives:

This course subject will help the students to:

- Learn the distinctive aspects of service marketing
- Understand the customers' perspective of service
- Recognise the importance of service innovation and design
- Gain knowledge on effective service technologies

3. Course Contents

Module 1: Introduction to services

Meaning of Services – Characteristics of services – Customer focus – Consumer behavior in services; Search, experience and acceptance properties – consumer choice – post-experience evaluation – Customer expectations of service – factors influencing customer expectation of service – Issues involving customer expectations – Case Study

Module 2: Understanding Customer Requirements

Understanding Customer Requirements through Marketing Research – Elements of Effective Marketing Research Programme – Relationship marketing – Customer profitability Segments – Service Recovery: Impact of Service Failure and Recovery – Customers' Response to Service Failures – Service Recovery Strategies – Case Study

Module 3: Service Innovation, Design and Standards

Concept of Service Innovation and Design – Challenges of Service innovation and Design – Types of service innovations – Stages in Service innovation and development – High-Performance Service Innovations – Customer service standards – Customer defined service standards – Types of customer defined service standards – Development of customer defined service standards – Case Study.

Module 4: Delivering and Performing Service

Employees' Roles in Service Delivery – Organizational Service Culture – Significant role of Service Employees – Customers' Roles in Service Delivery – Importance of Customers' roles – Customer Self-service technologies – Strategies for enhancing customer participation – Service through Intermediaries and Electronic Channels – Direct (Company owned Channels) – Franchising – Agents and Brokers – Electronic Channels – Effective service delivery through intermediaries – Case Study

Skill Development Component:

- ✓ Collecting information on service innovation by a select company and preparing a report on how the innovation took place and the outcome of the service innovation.
- ✓ Compare and contrast the Direct and Electronic channels of delivering services and preparing a report.

4. Course Outcome:

CO1: Learn the Concept of Services and intangible products

CO2: Comprehend the characteristics of service industry

CO3: Visualise the significance of service innovation and design

CO4: Employ various modes of service delivery in service organizations

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	-	2	-	-	-
CO2	3	2	-	-	2	-	-	-
CO3	3	2	2	-	3	-	-	-
CO4	2	3	-	-	-	-	-	-
Weighted Average	**2.75**	**2.75**	**0.5**	**-**	**1.75**	**-**	**-**	**-**

5. Reference Books:

1. Service Marketing – K Rama Mohana Rao, Pearson Education, New Delhi
2. Essentials of Service Marketing – Jochen Wirtz, Pearson Education, New Delhi
3. Service Marketing – Valarie A. Zethaml, Mary Jo Bitner, MCGraw Publication, New Delhi
4. Service Excellence: Creating Customer Experiences that Build relationships (Marketing Strategy Collection) – Ruth N Bolton, Business Expert Press, New Delhi

SC 06: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

1. Course Description:

Portfolio management, analysis and construction is a course in financial management which includes portfolio investment analysis, risk and return analysis, optimal combinations of securities which lead to create effective return on investment.

2. Course Objectives:

- To provide an overview of various investment avenues available for
- investment
- To provide an overview of market efficiency and evaluate market efficiency
- To understand about fundamental and technical analysis for better
- investment

- To evaluate various portfolio theories and model like Markowitz, CAPM and APT
- To evaluate portfolio performance using various measures

3. Pedagogy:

Students must work out assigned individual topics, present seminars and participate in case studies or group discussions.

4. Course Contents:

Module 1: Theories of Portfolio Management: Efficient Market Hypothesis **-** Random Walk- Levels of Efficiency – Weak – Semi Strong and Strong - Techniques for Measuring Efficiency - Empirical Tests – Behavioral Finance Dow Theory – Elliot Wave Theory – Investment Avenues - Case Studies.

Module 2: Fundamental and Technical Analysis- Economic Analysis- Industry Analysis - Company Analysis - Forecasting Company Earnings - Valuation of Companies -Intrinsic and Market Value - Market Indicators - Forecasting Individual Stock Performance – Technical Analysis: Basic Tenets of Technical Analysis — Behavior of Stock Prices – Major Trends – Charts and Trend Lines – Resistance and Support Lines – Different Patterns-Case Studies.

Module 3: Portfolio Analysis and Risk Management -Various Steps Involved in Portfolio Development- Theories Relating to Portfolio Analysis- Risk & Return – Mean Return – Variance Analysis -Standard Deviation- Beta and Alpha Measures- Portfolio Diversification- Markowitz Risks Return Optimization- Sharpe Index Model - Capital Asset Pricing Model- Arbitrage Pricing Theory- Case Studies.

Module- 4: Portfolio Performance Evaluation - Mutual Funds - Exchange Traded Funds (ETFs) - Performance Evaluation Measures– Sharpe - Treynor and Jensen's Ratios - Optimal Portfolio Selection-Case Study.

Skill Development

- Collect any five stocks/Mutual funds/ETFs historical prices available on NSE website and prepare comparative risk, return and relevant performance evaluation models report use of Excel spreadsheets.
- Fundamental analysis of securities with the help of qualitative and quantitative data available in respect of companies on various financial websites, etc. also practice use of technical charts in predicting price movements through line chart, bar chart, candle and

stick chart, etc., moving averages, exponential moving average.

Course Outcomes

CO-1: Know the various investment avenues available for investment and assess the risk and return associated with investments alternatives.

CO-2: Application of fundamental and technical analysis for security valuation

CO-3: Enhance the knowledge in various theories of portfolio analysis, construction and performance evaluation of portfolios

CO-4: Acquire the practical knowledge on online trading of different financial securities.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	2	-	2	-	-	
CO2	2	3	3	-	3	-	-	2
CO3	3	3	2	-	3	-	-	
CO4		3	2	-	-	-	-	2
Weighted Average	**2**	**3**	**2.25**	-	**2**	-	-	**1**

References:

1. Portfolio Analysis and Management –Balla D- S Chand & Co
2. Investment Analysis and Portfolio Management-Prasanna Chandra-McGraw-Hill Publication.
3. Security Analysis and Portfolio Management – V. A. Avdhani, Himalaya
4. Publication
5. Security Analysis and Portfolio Management – S. Kevin-PHI Publication
6. Security Analysis & Portfolio Management- Punithaathi Pandian-, Vikas Publishing House.

SC 07: COMPUTER APPLICATIONS IN COMMERCE

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours: 5 per week**

1. Course Description:

This course is designed to provide knowledge and skills in computer applications in commerce. It focuses on computer applications in Accounting, Finance, Taxation-GST,

Statistics and Operations Research.

2. Course Objectives:

The objective of the course is to enable students to understand computer applications in Accounting, Finance, online trading, online banking and online submission of income tax, indirect tax returns and XBRL applications in accounting. SPSS applications in statistical analysis and Operations Research.

3. Pedagogy:

Lectures, assignments, presentation, case analysis, online demonstrations and computer practical sessions

4. **Course Contents**:

Module1: Computer Applications in Financial Accounting: Features of Tally ERP.9. Setting up a new company and creating Masters in Tally ERP9 – Data Management security levels and controls - Technological advantages of Tally.ERP9 - Role of XBRL in Business Reporting - Fundamentals of XBRL. Features of XBRL software **-** Evolution of extensible Business Reporting Language (XBRL) - Commercial & Industrial Taxonomy of MCA - Instance Document - Filling of Financial statements using XBRL Software - Analysis of XBRL financial statements

Module 2: Computer Applications in Financial Management and Taxation: Using MS Excel to solve financial management problems- Present Value - Future Value - NPV etc - Online Trading of Securities - Online Banking - Filing of Online Application for PAN and TAN - Online submission of Income Tax Returns – Form 49 A From 49 AA Form 49 B, and TDS Return - E-filing of indirect taxes return –GST.

Module 3: Computer Applications in Statistical Analysis: Features of SPSS - Creating files and data entry in SPSS - Preparation of frequency tables and graphs - Computation and interpretation of Mean - Standard Deviation - Standard Error -Simple and multiple correlation – regression - Analysis of variance - t-Test - Chi-Square Test.

Module 4: Computer Applications in Operations Research: Mathematical formulation of Linear Programming and Integer Programming problems and solve them using computer software

Computer Lab Practical:

1. Computation of Present Value, Future Value, Net Present Value using MS-Excel. Filing of online application for PAN,TAN.
2. Online submission of Income Tax Returns and Indirect Tax Returns.
3. E-filing of indirect taxes return –GST.
4. Online Banking
5. Online Trading.

6. Completing accounting cycle using Tally ERP9.
7. Online submission of Financial Statements using XBRL
8. Computation of descriptive statistics, correlation, regression using SPSS.
9. Solving Linear Programming and Integer Programming problems.

Course Outcomes:

CO1: The application of accounting software for preparation of financial statements by using tally ERP.9.

CO2: Application of capital budgeting techniques such as NPV, IRR, PV etc., by using MS-Excel.

CO3: Analyze the research data by using SPSS software.

CO4: Filing of income tax return Forms and TDS Return and E-filing of indirect taxes return and filing of online application for PAN and TAN.

CO5: Preparation of financial report by using XBRL.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	2	3	3	-	-	-	-	3
CO2	2	3	3	-	3	-	-	3
CO3	2	3	3	-	3	-	-	3
CO4	2	3	3	-	-	-	-	3
CO5	2	3	3	-	-	-	-	3
Weighted Average	**2**	**3**	**3**	-	**1.2**	-	-	**3**

4. References:

1. Tally.ERP 9 Essentials, 2009, Tally Solutions Pvt.Ltd.
2. Mastering Financial Modeling-AlastairDay.
3. www.xbrl.org.
4. www.iasb.org.
5. www.spss.org
6. www.rbi.org.
7. www.incometax.india.gov.in.
8. www.xbrl.icai.org.
9. www.mca.gov.in
10. www. bse.org.nse.org.sebi.org.
11. Goods and Services Tax –by Dr. H.C. Mehrotra, Prof. V.P. Agarwal, Dr. S.K.Batra, Sahitya Publications Agra.

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OE01: STOCK MARKETS AND INVESTEMENT DECISIONS

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours: 5 per week**

1. Course Description:

Stock markets are more popular today as they provide a wonderful opportunity to the general public to invest their savings. This course provides the coverage of fundamentals of stock markets, indices, instruments and trading in stocks and shares including DEMAT Account.

2. Course Objectives:

The course is designed to meet the expectations of non-commercial graduates and intended to help students to:

1. Understand the role of stock markets as an avenue for investments.
2. Understand the different types of stock market instruments.
3. To make the students to be competent towards the basics relating to trading in stocks.
4. To gain knowledge on the trading activities

3. Pedagogy:

Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus on providing conceptual understanding and analytical setting for select aspects of the course content. Tutorials include writing assignments and visits to stock brokers.

1. Course Contents:

Module 1: Stock Markets:

Meaning - History- Functions of Stock Exchange- Leading Stock Exchanges in India - NSE and BSE - Role of SEBI - Investor's Protection – Grievance Redressal

Module 2: Stock Market Instruments

Short Term and Long Term Instruments – Shares - Types of Shares – Debentures - Types of debentures -Bonds - Types of Bonds - Benefits of Investments in Stocks - Stock v/s Debenture - Case studies

Module 3: Trading in Stock Market:

Trading Mechanism - PAN Card, Speculation- Types of Speculation - Advantages and Drawbacks of Speculation- DEMAT Account - Depository Services - NSDL - CSDL –

Stock Market Trading types – Intraday Trading - Delivery Trading - Swing Trading - Positional Trading - Fundamental Trading - Technical Trading

Module 4: Stock Market Indices and Risk Management:

SENSEX – NIFTY- SENSEX S&P - CNX - MID CAP - SMALL CAP - LARGE CAP – Factors impacting on indices - Recent changes in the Stock Market Volatilities- Risk Management – Systematic and Unsystematic risk, Case studies

Skill Development Components:

- ✓ Preparing a watch list of large-cap/ mid-cap/ small-cap stocks
- ✓ Observing the movement of stock prices and preparing weekly reports.

Course Outcomes:

CO1: Enhancing the knowledge on theoretical and practical concepts of Indian stock markets and Stock Market Instruments

CO2: Understanding the Trading mechanism in stock market

CO3: Analyze the Stock price movement using BSE-SENSEX and NSE-NIFTY as benchmark indices

CO4: Learning online trading mechanism

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	2	-	-	-	-	1
CO2	1	3	3	-	-	-	-	3
CO3	1	2	2	-	3	-	-	1
CO4	-	-	3	-	-	-	-	2
Weighted Average	**1.25**	**2**	**2.5**	-	**0.75**	-	-	**1.75**

References:

1. Capital Markets- By Dr. S. Guruswamy, McGraw Hill Publications.

2. Capital Market and Investment Management- By Dr. M.S. Khan, S.M.Farisal, Laxmi Publications, firstedition.

3. Capital Market Instruments- By Dr. G. Kotreshwar, Chandana Publications,Mysore.

4. Equity Shares, Preferred Shares and Stock Market Indices- By Sunil, Parameswaran, Mcgraw Hill Publications.

OE 2 : MANAGEMENT OF ENTERPRISES

Total Credits:4 Credit Pattern: 3:1:0 No of hours: 5 per week

1. **Course Description** This course is designed to help the students to understand the basic concepts of management such as enterprise planning, organizing, coordination and controlling
2. **Course Objectives:**

- To make students understand fundamental concepts and principles of management, including the basic roles, skills, and functions of management.
- To enumerate the Importance of various structural forms in organizations
- To understand the importance of various dimensions of controls employed in organizations.

3. **Pedagogy:** Course content delivered through lecture session and tutorial sessions which includes group discussion, case study analysis, etc.,
4. **Course Contents**

Module 1: Introduction to Management - Meaning, nature, and characteristics of management, scope and Functional areas of management, goals of management, levels of management, a brief overview of the evolution of management theories, Planning**-** Nature, importance, types of plans, steps in planning, Organizing- nature and purpose, types of Organization, Staffing- meaning, the process of recruitment and selection.

Module 2: Organizing: Nature and purpose of organizing- Organization structure - Line and staff authority Departmentalization & Bases of Departmentalization - Span of control -centralization and decentralization- Delegation of authority – Span of Management – Informal Organisation & Grapevine. Impact of Technology on Organization structure.

Module 3: Coordination: Features of Coordination, Principles of Coordination, Coordination – The Essence of Management, Process of coordination in Management, Elements of coordination,

Module 4: Controlling: Managerial Control, Relationship between Planning and Control, Limitations of Control, Feedback, Types of Control Systems and Techniques, Management by Exception, Budgetary Control, Functional and Dysfunctional aspects of Budgetary Control, Internal Control Systems, Internal Audit, and Management Audit.

5. **Skill Development:**

1. Visit a company and enumerate different types of organisational structures.
2. Visit accompanies and study their system of delegation of responsibilities.

3. Visit a company to study the control systems employed to enhance organizational performance.

4. Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	-	-	-	-	-
CO2	2	2	-	-	-	2	2	-
CO3	2	1	-	-	-	3	3	-
CO4	2	3	1	-	-	-	-	-
Weighted Average	**1.25**	**2**	**0.25**	**-**	**-**	**1.25**	**1.25**	**-**

6. Reference Books

- Essentials of Management- Koontz and O'Donnell-McGraw Hill,
- Introduction to Management – Fred Luthans-McGraw
- The Practice of Management-Peter. F.Drucker
- Management-Stoner, Freemen and Gilbert

III SEMESTER

HC 08: BUSINESS RESEARCH METHODS

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

1. **Course Description:** This course provides the coverage of business research methods, ethical issues in business research methods, research process, data collection methods, designing of questionnaire, various statistical tools like uni-variate and bi-variate analysis and report writing.

2. **Course Objectives**: The course is envisaged to provide the student the knowledge and skill related to conduct of research related to business. This basic course familiarizes the student with the technicalities of executing a research assignment, in particular the applied research domain.

3. **Pedagogy:** The lecture sessions focus on providing conceptual understanding and analytical setting for select aspects of the course content. This session focuses on student involved and student driven content study. Identified groups of students make presentations and interact with both the faculty and the other students. The aspects reinforced through lecture and tutorial is taken up for practical study. Here the students

would undertake field exercises related to different aspects of the course contents.

4. Course Contents:

Module: 1 Business Research: Meaning – types - process of research- management problem - defining the research problem - formulating the research Hypothesis - developing the research proposals - research design formulation - sampling design - planning and collecting the data for research - data analysis and interpretation - Research Application in business decisions - Features of good research study-Ethics in research, Plagiarism, Digital Technologies and falsifications.

Background to Research: Developing research questions-Research paradigms-Contributions of research to theory and practice- Importance of scientific research in business decision making - Types of research and research process

Module: 2 Types of Business Research Design: Exploratory and Conclusive Research Design Exploratory Research: Meaning, purpose – methods - secondary resource analysis, comprehensive case methods, expert opinion survey, focus group discussions - Conclusive research Design - Descriptive Research – Meaning - Types-cross sectional studies and longitudinal studies - Experimental research design-Meaning and classification of experimental designs - Pre experimental design, Quasi - experimental design – True experimental design, statistical experimental design - Observation Research – Meaning – Uses - Participation and Non-participation – Evaluation - Conducting an Observation study - Data collection.

Literature Review: Identifying - accessing and managing information and scholarly literature - Academic writing and referencing - Literature review development-Argumentation and synthesis

Module: 3 Measurement and Data Collection: Primary and Secondary data Primary data collection methods – Observations – survey - Interview and Questionnaire - Qualitative Techniques of data collection. Questionnaire design – Meaning - process of designing questionnaire - Secondary data –Sources- advantages and disadvantages Measurement and Scaling Techniques: Basic measurement scales-Nominal scale - Ordinal scale - Interval scale - Ratio scale. Attitude measurement scale - Likert's Scale - Semantic Differential Scale - Thurston scale - Multi-Dimensional Scale – Data Processing

Sampling: Concepts - Types of Sampling - Probability Sampling - simple random sampling, systematic sampling - stratified random sampling - cluster sampling -Non ProbabilitySampling-conveniencesampling-Judgementalsampling-snowballsampling - quota sampling - Errors in sampling

Module: 4 Preparing the Data for Analysis: Editing, Coding, Classification, Tabulation, Validation Analysis and Interpretation. Errors in Hypothesis Application of

statistical tools for the analysis of data. Technology in research. Report writing and presentation of results: Importance of report writing, types of research report, report structure, guidelines for effective documentation.

Skill Development

- Review a minimum of 10 research articles on your interesting research area.
- Prepare and present a project proposal of your choice.
- Conduct an interview to collect primary data and analyze the data using software.

Course Outcome:

CO1: Identify the Research problems in the area of Business and Commerce

CO 2: Write a literature review that synthesizes and evaluates literature in a specific topic area to justify a research question

CO 3: Apply appropriate research design and methods to address a specific research question and acknowledge the ethical implications of the research

CO 4: Develop a research proposal/research paper on the basis their study.

CO 5: Present and defend a research proposal/ research paper.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	2	-	3	-	-	-
CO2	3	3	-	-	3	1	-	-
CO3	-	3	3	3	3	-	-	-
CO4	3	-	3	-	2	3	-	-
CO5	-	3	3	-	3	3	-	-
Weighted Average	**1.8**	**2.4**	**2.2**	**0.6**	**2.8**	**1.4**	-	-

References:

1. Business Research Methods, William G. Zikmund, The DrydenPress
2. Research for Development: A Practical Guide, Sophie Laws, VISTAAR

Publications

3. Research Methodology in Spcial Sciences - Krishnamachari
4. Research Methodology –C K Kothari

HC 09: OPERATIONS RESEARCH

Total Credits:4 Credit Pattern: 4:1:0 No of hours: 5 per week

1. Course Description:

The course Operations Research covers linear and integer programming, transportation and assignment problems and their applications in decision making in business.

2. Course Objectives:

The objective of the course is to acquaint the students with the use of quantitative models in decision making.

3. Pedagogy:

The lecture sessions focus on providing conceptual understanding and solving problems of the course content. Students would make presentations and interact with both the faculty and the other students during tutorial sessions.

4. Course Contents:

Module -1: Introduction to Operations Research: Definition, scope, objectives, applications, models and limitations of Operations Research. Linear Programming Problem – Formulation of LPP - Graphical solution of LPP - Simplex Method.

Module -2: Transportation Problem: Formulation – solution - unbalanced Transportation problem - Finding basic feasible solutions – Northwest corner rule - least cost method and Vogel's approximation method - Optimality test: the stepping stone method and MODI method, AssignmentModel–Formulation-Hungarianmethodforoptimalsolution-Solving unbalanced problem.

Module –3: Sequencing Models. Solution of Sequencing Problem – Processing n Jobs through 2 Machines – Processing n Jobs through 3 Machines – Processing 2 Jobs through m machines – Processing n Jobs through Machines**.**

Module- 4: Game Theory. Competitive games, rectangular game, saddle point - minimax (maximin) method of optimal strategies - value of the game - Solution of games with saddle points - dominance principle. Rectangular games without saddle point – mixed strategy for 2 X 2games.

Replacement Models- Replacement of Items that deteriorates, whose maintenance costs increase with time without change in the money value - Replacement of items that fail suddenly: individual replacement policy

Course Outcomes:

CO 1: Application of Linear Programming in cost minimization and profit maximization

CO 2: Conceptual knowledge and practical applications on Transportation and Assignments

CO 3: Understand the usage of game theory and Simulation for Solving Business Problems

CO4: Understand the applicability of replacement model in cost analysis

Skill Development

1. Developing solutions to business problems with LPP application.
2. Understanding scenarios and developing decision variables.
3. Selection of most likely and applicable machines through cost-benefit analysis.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	2	3	2	-	2	-	-	-
CO2	3	3	-	-	-	-	-	-
CO3	2	3	-	-	-	-	-	-
CO4	3	3	-	-	-	-	-	-
Weighted Average	**2.5**	**3**	**0.5**	-	**0.5**	-	-	-

References:

1. 1.Operations Research: Frederick S Hillier and Gerald J Lieberman, Tata McGraw- Hill Publishing Company Limited, New Delhi.
2. Operations Research - Theory and Applications: J. K. Sharma, Macmillan India Ltd. New Delhi.1997.
3. Operations Research – Applications and Algorithms: Wayne L. Winston, Thomson Learning, New Delhi.
4. Operations Research: Panneeraselvam, Prentice Hall of India, New Delhi.
5. Practical Problems in Operations Research: Chawla, Gupta and Sharma, Kalyani Publishers. New Delhi.

SC08: ENTREPRENEURSHIP DEVELOPMENT

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours:5 per week**

1. **Course Description:**

The course will cover the characteristics of and types of entrepreneurs, identifying problems and opportunities, creative problem solving, developing aviable business model and entrepreneurial supporting system etc.

2. **Course Objectives:**

1. To familiarize the students with the concept and overview of entrepreneurship with a view to enhance entrepreneurial talent.
2. To impart knowledge on the basics of entrepreneurial skills and competencies to provide the students with necessary inputs for creation of new ventures.
3. To explore new vistas of entrepreneurship in 21st century environment to generate innovative business ideas.

3. Pedagogy:

The subject matter will be presented through lecture, classroom discussion, workshops, special lecture programmes from industry experts, case study analysis and industrial visits.

4. Course Contents:

Module - 1 Concept of Entrepreneurship

Evolution of Entrepreneurship - Types of Entrepreneur - Theories of Entrepreneurship - Stages in Entrepreneurial Process- Entrepreneurial Competencies - Role of Entrepreneurship in Economic Development - Factors affecting Entrepreneurship - entrepreneurial policy – culture and entrepreneurship-Case Study.

Module - 2 Establishing Enterprises:

Generating new ideas – Entrepreneurial Motivation - Identifying the Business Opportunities - Business Plan -Meaning of business plan - Business plan process - Advantages of business planning -Innovation, Creativity, Invention Vs, Innovation - Marketing plan - Production/operations plan - Organization plan - Financial plan- Final Project Report with Feasibility Study - preparing a model project report for starting a new venture – case studies.

Module - 3 Institutions Supporting System:

Role of Government in promoting Entrepreneurship - A brief overview of financial institutions in India – Central level and state level institutions - SIDBI - NABARD - IDBI - SIDCO – Indian Institute of Entrepreneurship - DIC - Single Window - Latest Industrial Policy of Government of India- Start-up India- startups and climate for startups MUDRA Scheme. Start-up Karnataka – State's financing for start-ups at the state level.

Module - 4 Managing the Enterprise:

Financial Management: Working Capital Management - Financial Planning & Control - Marketing Management -Marketing Plan & Control - CRM – Product Development & Marketing –Production Management: Inventory Control, Productivity, and Break Even Analysis – Human Resource Management: Manpower Planning – Labor Productivity – Industrial Relations.

Skill Development Component:

- ✓ Visiting a start-up/ Entrepreneurship venture and conduct an interview with the entrepreneur on his/ her entrepreneurial journey.
- ✓ Visiting a start-up/ Entrepreneurship business which is financially supported by Central/ State Government schemes and preparing a report on the same.

Course Outcomes:

CO 1: Understanding the distinct entrepreneurial traits.

CO 2: Know the parameters to assess opportunities and constraints for new business ideas.

CO 3: Understand the systematic process to select and screen a business idea.

CO 4: Design strategies for successful implementation of ideas.

CO 5: Write a business plan.

CO 6: know the role of Central and State Government institutions in the development of Entrepreneurship in India.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	1	-	-	-	-	-	-
CO2	1	3	-	-	2	-	-	-
CO3	2	2	-	-	-	-	-	-
CO4	1	3	-	-	-	-	-	-
CO5	2	2	-	-	3	3	-	3
CO6	2	3	-	-	-	-	-	-
Weighted Average	**1.83**	**2.33**	-	-	**0.83**	**0.50**	-	**0.50**

References:

1. Vasant Desai, The Dynamics' of Entrepreneurial Development and Management, Himalaya Publishing House, 2009.
2. Poornima M. Charantimath, 'Entrepreneurial Development and Small Business Enterprises", Pearson Education Licensee, New Delhi2006.
4. Matthias Fink, Sascha Kraus, The Management of Small and Medium Enterprises, Routledge Studies in Small Business,2009
5. S. Nagendra, V.S. Manjunath, "Entrepreneurship and Management", Pearson Education Licensee, New Delhi2011.

SC 09: INTERNATIONAL HUMAN RESOURCE MANAGEMENT

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours:5 per week**

1. Course Descriptions:

This course provides the coverage of concept of IHRM, Human resources planning and procurement, human resource development and compensational and rewards system in the context of internationalization.

2. Course Objective:

Through this course, the students will be able to:

1. Understand the differences between domestic HRM and international HRM
2. Know the process of staffing and selection of personnel on international assignments.
3. Learn about the elements of international compensation packages.

3. Pedagogy:

Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus on providing conceptual understanding and analytical setting for select aspects of the course content.

Course Contents:

Module 1: Nature of international Human Resource Management (IHRM)

Introduction to HRM - differences between domestic HRM and IHRM - challenges of globalization and managing resources - Role of information technology in IHRM - Models of IHRM- Matching model - Harvard Model - Contextual Model, and 5P Model European Model - Role of culture in International HRMHR practices in Japan, US, Europe and India- Country and Regional Cultures -Country Culture versus MNE Culture - Culture and employee management issues/ impact of Country culture on IHRM

Module2: Sourcing Human Resource for Global Markets:

Staffing – Approaches to Staffing – International Assignments – Reasons for international assignments - Types of International Assignments - Transferring staff for international assignments - recruitment and selection of expatriates – Roles of an Expatriate – Selection Criteria - issues in staff selection of expatriates - Training and development – Pre-departure expatriate training - developing international staff and multinational teams through international assignments.

Module 3: Performance Management:

Factors associated with individual performance and appraisal criteria used for performance appraisal of international employees – appraisal of host country nationals. Compensation -objectives of international compensation approaches of international compensation. Issues and challenges in international performance management -country specific performance management practices.

Module 4: Expatriate Failure:

Expat Failure - Causes of expatriate failure, Repatriation – Re-entry and career issues – Individual reactions to re-entry – job related factors and social factors – Responses by the MNE – Repatriation process – Designing Repatriation Programme - Labor relations – Key issues in international relations –strategic choices before firms - strategic choices before unions –union tactics.

Skill Development Component:

- ✓ Visiting an MNE and preparing a report on International Compensation mechanism adopted by the MNE
- ✓ Preparing a questionnaire, conducting an interview with a repatriate on his/her experience on job related and social related factors post - repatriation and preparing a report.

Course Outcomes:

CO 1: Demonstrate an understanding of key terms, theories/concepts and practices within the field of IHRM

CO 2: Develop and ability to undertake qualitative and quantitative research and apply this knowledge in the context of an independently constructed work

CO 3: Identify and appreciate the significance of ethical issues in HR practices and the management of people in the workplace.

CO 4: Critically appraise the impact of cultural and contextual factors in shaping human resource practices in MNCs

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	-	-	-	-	-	-	-
CO2	1	2	-	-	3	-	-	-
CO3	3	2	-	2	-	-	-	-
CO4	3	2	-	2	-	-	-	-
Weighted Average	**2.5**	**1.5**	-	**1**	**0.75**	-	-	-

References:

1. International Human Resource management –Pipparely, paperback 2011.

2. Principles of HRM—George W. Bohalandar Scott.A Snell. November,2016.

3. Fundamentals of HRM , Person , Garry dessler, October,2016.

4. HRM , John M. Ivancevich, Indian Edition

5. Human Resource Development, D.K. Bhattacharya, Himalaya publishing house 2015.

SC 10: INTERNATIONAL FINANCIAL MANAGEMENT

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per hour

1. Course Description:

As there has been a significant increase in multinational corporate activities; multinational finance is an added dimension of every advanced course in the area of finance. Hence this course has been designed to highlight the important finance functions of an MNC operating in India.

2. Course Objectives:

- To provide an overview of International Financial Environment
- To understand about foreign Exchange market and evaluate exchange rate
- To provide an overview of international capital budgeting and working capital management
- To provide an overview of international project appraisal

3. Pedagogy:

The lecture sessions focus on providing conceptual understanding and analytical setting for select aspects of the course content. This session focuses on student involved and student driven content study. Identified groups of students make presentations and interact with both the faculty and the other students. The aspects reinforced through lecture and tutorial is taken up for practical study. Here the students would undertake field exercises related to different aspects of the course content.

4. Course Contents:

Module-1:International Financial Environment: Introduction - International Finance- Multinational Enterprise Financial Management - International Monetary System- Balance of Payments-Arbitrage - Types of Arbitrages –Parity Conditions- Interest Rate Parity- Purchasing Power Parity - International Fisher Effect.

Module-2: Foreign Exchange Market: Function and Structure of The Forex Markets- Participants-Exchange Rate Quotations, Nominal, Real and Effective Exchange Rates-

Determination of Exchange Rates in Spot and Forward Markets- Exchange Rate Behaviour-Cross Rates- - Arbitrage Profit in Foreign Exchange Markets.

Module- 3: International Capital Budgeting: Concept - Evaluation of A Project - Factors Affecting - Risk Evaluation - Multinational Working Capital Management- Short-Term Financing- Financing Foreign Trade- Current Asset Management for the Multinational.

Module- 4: International Financial Markets Instruments -Foreign Portfolio Investment-International Bond & Equity Market- GDR- ADR- Foreign Bonds & Eurobonds- Global Bonds-Floating rate Notes-Zero Coupon Bonds,

Skill Development:

- Collect one year exchange rate on daily basis and make report on microeconomic factors impact on exchange rate movement.
- Visit any RBI regulated banks and collect information regarding eligible to exchange foreign currency and how do banks exchange foreign currency

Course Outcomes

CO-1: Enhance the knowledge on international financial environment.
CO-2: Understanding of Balance of Payment in Indian Scenario
CO-3: Practical approach on determination of foreign exchange rates

CO-4: Application of capital budgeting, cost of capital and working capital management in international transactions.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	-	-	-	-	-
CO2	2	2	-	-	2	-	-	-
CO3	1	3	-	-	2	-	-	-
CO4	2	3	1	-	2	-	-	-
Weighted Average	**2**	**2.5**	**0.25**	-	**1.5**	-	-	-

References:

1. International Financial Management-Madhu Vij-Vikash Publication
2. International Financial Management-V. K Balla- S. Chand Publication
3. International Financial Management- Apte- McGraw Hill
4. International Financial Management-O.P Agarwal- Himalaya Publishing House

SC 11: PROJECT MANAGEMENT

Total Credits: 4 per week **Credit Pattern: 3:1:0** **No of hours: 5**

1. **Course Description:** This course is structured for understand concept of project planning and analysis and financial requirement analysis. Further, study on monitoring and controlling and implementation of feasible project.
2. **Course Objectives:** This course will help the students

- To learn concept of project planning, analysis and implementation.
- To know market and financial analysis of project.
- To learn Monitoring and Controlling the Project management

3. **Pedagogy:**

Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus on providing conceptual understanding on project planning and analysis and tutorial session helps understand practical aspects of feasible project planning and implementation.

4. **Course Content:**

Module 1: Project Planning & Analysis: Forms of Project Organization – Project Planning – Project Control – Human Aspects of Project Management – Generation and Screening of Project Ideas-Generation of Ideas – Preliminary Screening – Project Rating Index.

Module 2: Market and Financial Analysis: Market and Demand Analysis-Estimation of Cost of Project-Estimates of Sales and Production- Cost of Production- Working Capital Requirements and its Financing- Estimates of Working Results- Breakeven Point Projected Cash Flow Statement- Projected Balance Sheet-Appraisal -Criteria-Structure of

Financial Institutions in India – Schemes of Assistance – Term Loans Procedures – Project Appraisal by Financial Institutions-Financial Feasibility Analysis–Preparation of Detailed Project Report.

Module 3: Monitoring and Controlling the Project: Successful Project Implementation-Project Review and Administrative Aspects- Evaluating the Capital Budgeting System of an Organization–Net Present Value – Benefit Cost Ratio – Internal Rate of Returns– Payback Period – Accounting Rate of Returns – Investment Appraisal in Practice-Project Auditing and Project Termination.

Module 4: Network Techniques for Project Management: Development of Project Network – Time Estimation- Project Time Control – What if' Analysis – Determination of Critical Path – Scheduling When Resources Are Limited – PERT and CPM Models – Network Cost System

Skill Development:

- Students are asked to identify how the approaches to project appraisal and differ between commercial projects in the private sector and a public sector.
- Visit any organization which have undertaken large scale projects and study the risk associated with such projects and also study how they access and manage such risks.

Course Outcomes:

CO-1: Students would learn project planning & analysis and implementation.

CO-2: Describe the method of generating project ideas and screening them

CO-3: Students would learn to prepare a detailed project plan.

CO-4: To understand various financial and technical aspects regarding project management.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	-	-	-	-	-	-
CO2	2	3	-	-	3	-	-	-
CO3	3	3	-	-	3	-	-	-
CO4	3	2	-	-	-	-	-	-
Weighted Average	**2.75**	**2.75**	**-**	**-**	**1.5**	**-**	**-**	**-**

References:

Project Planning: Analysis, Selection, Implementation and Review-Prasanna Chandra - Mc-Graw Hill Education.

Project Management- K Nagarajan -New Age International Publishers.

Project Management- Samuel J and MantelJR- Wiley India.

Project Management and Control – Narendra Singh- HPH.

Project Management – Bhavesh M. Patel-Vikas Publication.

Project Management- The Managerial Process – Gray& Larson-TMH.

SC 12: ELECTIVE GROUP A-BUSINESS TAXATION

PAPER1: GOODS AND SERVICES TAX AND CUSTOMS DUTY

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per week

1. Course Description:

This paper is to educate about Indian tax system, its background, and its operation in the global competitive market. The importance and administration of the indirect taxes in the Indian market-oriented economy and its role in achieving the objectives of modern welfare government and to evaluate the impact of GST in the present Indian tax scenario.

2. Course Objectives:

After completion of this course the students would be able:

- To provide an overview of GST, implementation and structure of GST in India
- To provide an understanding of levy, collection, valuation and input tax credit of GST
- To understand about GST registration returns and audit.
- To give an overview of customs duty and valuation of custom duty

3. Pedagogy:

1. Lecture:
2. Tutorial and bridge class (for non-tax students)
3. Live leading cases: pending and deciding in the high court and supreme courts.

4. Practical works:

Tax planning, Tax management, filing of various tax returns and working as consultants

and tax advisers for small companies nearby dealers and companies relating to GST and Customs

5. Course Contents:

Module 1: Introduction To GST– Background--Constitutional Provision -Structure of Indian Tax System- Different Types of Taxes- Taxes Under Indirect Tax- Structure of GST -Types of GST – CGST- SGST- IGST- UTGST - Taxes Subsumed in GST - Taxes not Subsumed in GST- GST Council.

Module 2: Taxes Under GST- Supply of Goods & Services - Levy and Incidence of GST- Composition Levy Scheme in GST - Rates and Schedules- GST on Exports-Imports and SEZ Supplies- E-Commerce- Value of Supply- Input Tax Credit- Payment of Tax- Interest- Penalty-Accounts- Utilization of Input Tax Credit.

Module 3: Other Aspects Under GST – Registration Under GST-Tax Invoice, Credit and Debit Notes-Returns- Payment of Tax- Assessment and Audit- Appeals and Revisions.

Module 4: Customs Duty: Customs Act-1962 - Customs Tariff Act-and Applicable Rules – Authority for Advanced Ruling - Provisions for Levy of Customs Duty- Types of Customs Duties- Classification of Goods -Valuation of Goods- Calculation of Assessable Value -Custom Duty Payable- Duty on Baggage- Goods Imported or Exported by Post and Stores- Duty Draw-Back Schemes- Impact of GST on Customs Duty- Case Studies.

Skill Development:

- Identify and evaluate impact of Goods and Service Tax (GST) on Indian economy or any selected business or manufacturing industries as students' choice.
- A comparison of select countries GST rate on selected goods or services with India, Further, analysis, make report and suggest.

Course Outcomes

CO-1: Overview of Good and Services Tax system and structure in India.

CO-2: Practical application of levy, collection, valuation and ITC under GST

CO-3: Filing of online GST return

CO-4: Understanding the concept of Custom's duty, its valuation and duty drawback in India

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	-	-	-	-	-
CO2	2	3	3	-	1	-	-	3
CO3	3	3	3	-	-	-	-	3
CO4	3	3	2	-	-	-	-	-
Weighted Average	**2.75**	**2.75**	**2**	-	**0.25**	-	-	**1.5**

References:

1. Goods and Services Tax -HC Mehotra-Sahitya Bhavan Publication
2. Goods and Services Tax with Customs Law-Dr Srinivas K.R, Dr. Jayaprasad and Dr Bhavani. M- Kalyani Publication
3. Goods and Services Law and Practice-CA Nitesh Parashar- Bharath's Publication
4. GST Manual: CA G Shekar-Padhuka's Publication
5. GST and Customs Law-Dr. K Vinod Singhania - Taxmann Publication

SC 13 : ELECTIVE GROUP B – FINANCIAL ACCOUNTING

PAPER-1: ACCOUNTING FOR SPECIAL TRANSACTIONS

Total Credits:4 **Credit Pattern:3:1:0** **No of hours:5**

1. Course Description:

This course focuses on contemporary areas of financial accounting which are likely to be of interest to a wide range of stakeholders including investors, employees, society, government agencies and public at large. The course provides the coverage of accounting for the interim, segment reporting, accounting for income taxes and goods and services tax, and fair value accounting.

2. Course Objectives:

The aim of this course to provide knowledge and skills relevant in accounting to the students on contemporary areas of financial accounting and to bring attitudinal changes to innovations in accounting and to develop professional knowledge and skills in contemporary areas

3. Pedagogy:

Course activities consist of lectures, case study analysis, group discussions, seminar presentation, assignment writing and tests. Reading and analysis of annual reports of

companies is the integral part of instruction.

4. Course Contents:

Module 1: Interim and Segment Reporting: Meaning and relevance of Interim Financial Reporting and Segment Reporting – Recognition - measurement and disclosure requirements under Indian accounting standards - Problems and case study analysis

Module 2: Accounting for Income tax: Conceptual Framework of accounting for Income Tax by companies - Accounting for actual and deferred income tax - Journal Entries - ledger accounts and final accounts, Hybrid securities,

Module 3: Accounting for Goods and Services Tax: Conceptual framework of accounting for Goods and Services Tax by companies - Accounting for Output GST and Input GST credit - Journal Entries - ledger accounts and final accounts

Module 4: Fair Value Accounting: Definition and Relevance – Recognition - measurement and disclosure of fair value - Application of fair value in accounting - Problems and Case Study analysis.

Skill Development:

1. Collecting an annual report of a company and analysing the data
2. Problem solving on fair value accounting.

Course Outcomes:

CO 1: Know the measurement and disclosure of Interim Financial Reporting and Segment Reporting.

CO 2: Understand the accounting concept relating to levy of income tax

CO 3: Prepare accounting for Goods and Services Tax.

CO 4: Know and understand fair value and its applications in Accounting.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	-	-	-	-	-
CO2	3	2	-	-	-	-	-	-
CO3	2	3	2	-	-	-	-	-
CO4	3	3	-	-	-	-	-	-
Weighted Average	**2.75**	**2.5**	**0.5**	**-**	**-**	**-**	**-**	**-**

References:

1. Indian Accounting Standards.

2. International Financial Reporting Standards
3. Interim and Annual Financial Reports of Companies.
4. IT and GST filings of Companies.

Websites:
www.iasb.org.
www.icai.org.,
www.mca.gov.in,
www.xbrl.org. www.cbdt.org.

SC 14 - ELECTIVE GROUP C: FINANCIAL MANAGEMENT

PAPER-1: CORPORATE RESTRUCTURING

Total Credits: 4 per week **Credit Pattern: 3:1:0** **No of hours: 5**

Course Description: This course provides the coverage of the corporate restructure and its various methods. Further helps to know merger and acquisition and takeover along with legal aspects of mergers, amalgamations acquisitions and takeovers.

Pedagogy:
Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus on providing conceptual understanding on corporate restructure, merger and acquisition and takeover. Tutorial session helps understand practical aspects of corporate restructure and merger acquisitions.

Course Objectives:

This course will help the students

- To learn concept of corporate restructuring, merger and acquisition and takeover.
- To know different types of corporate structure
- To learn various legal aspects of Mergers/amalgamations and acquisitions/takeovers.

Course Contents:

Module 1: Corporate Restructuring: Meaning-Significance and Forms of Restructuring–Sell-Off- Spin-Off- Divestitures- Demerger- Equity Carve Out (ECO)- Leveraged Buy Outs (LBO)- Management Buy Out (MBO)- Master Limited Partnership (MLP)- Limited Liability Partnership (LLP) and Joint Ventures.

Module 2: Introduction of Merger and Acquisition: Meaning-Types of Mergers–Merger Motives- Theories of Mergers-Mergers and Industry Life Cycle-Reasons for Failures of M &A-Synergy-Types of Synergy–Value Creation in M&A-**Merger Process-** Procedure for Effecting M & A-Five-Stage Model–Due Diligence–Types-Process and Challenges of Due Diligence-HR Aspects of M & A–Tips for Successful Mergers-Process of Merger Integration

Module 3: Acquisitions and Takeovers: Meaning and Types of Acquisition/Takeovers-Friendly and Hostile -Takeovers-Anti-Takeover Strategies-Anti-Takeover-Amendments-Legal-Aspects of M&A-Combination and Competition.

Module 4: Legal Aspects of Mergers, Amalgamations Acquisitions and Takeovers: Combination and Competition Act- Competition Commission of India (CCI)- CCI Procedure in Regard to the Transactions of Business Relating to Combination - Scheme of Merger/Amalgamation-Essential Features of the Scheme of Amalgamation-Approvals for the Scheme-Step Wise Procedure- Acquisitions/Takeovers- Listing Agreement-The SEBI Substantial Acquisition of Shares and Takeover Code.

Skill Development:

- Visit any organisation which is under corporate restructure or merger and acquisition and compare and prepare pre and post restructure/merger financial statement.
- Prepare Legal Aspects of Mergers, Amalgamations Acquisitions and Takeovers

Course Outcomes:

After completion of this course, the students would be able to

CO-1: Explain the concept of corporate restructuring and major forms of corporate restructuring.

CO-2: Describe the process of value creation under different forms of Merger and Acquisition

CO-3: Evaluate the operational & financial performance of Merger and Acquisition

CO-4: Various legal aspects regarding mergers/amalgamations and acquisitions/takeovers

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	-	-	-	-	-	-	-

CO2	2	3	-	-	3	-	-	-
CO3	2	3	-	-	3	-	-	-
CO4	2	2	-	-	-	-	-	-
Weighted Average	2.25	2	-	-	1.5	-	-	-

References:

1. Mergers, Acquisitions & Corporation Restructuring- Rabi Narayan Kar- International Book House Private Limited.
2. Mergers, Restructuring and Corporate Control-Fred Weston, Kwang S Sung, Susan E Hoag- Pearson, 1 st Edition, 2016.
3. Creating Value from Mergers and Acquisitions, Pearson Education, 2nd Edition, 2016.
4. Donald M. Depamphilis, Mergers, Acquisitions & Corporation Restructuring-Sudi Sudarasanam-International Book House Private Limited.
5. Mergers, Acquisitions & Corporate Restructuring- Prasad Godbole- Vikas Publication.
6. Mergers and Acquisitions & Takeovers-Machi Raju- International Book House.
7. Investment Valuation-Ashwath Damodaran- John Wiley & Sons Inc.

SC15 - ELECTIVE GROUP D: HUMANRESOURCE MANAGEMENT PAPER1: STRATEGIC MANAGEMENT OF HUMAN RESOURCES

TotalCredits:4 **Credit Pattern: 3:1:0** **No of hours:5**

1. Course Descriptions:

This course provides the exposure of Concept of Strategic HRM, Strategic Human Resources Planning and Procurement, Human Resource Development and Strategic Compensational and Rewards System.

2. Course Objective:

The objective of this course is to provide the student knowledge about human resources, their significance and managing them strategically in organizations.

3. Pedagogy:

Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus

on providing conceptual understanding and analytical setting for select aspects of the course content.

4. Course Contents:

Module – 1: Introduction to Strategic HRM,- The Strategic Role of Human Resource Management: Evolution of SHRM – globalization; -Nature, need for SHRM, Benefits and short comings of SHRM -Aligning HR strategy with corporate strategy – Vertical fit and Horizontal fit –- Planning and Implementing Strategic HR policies, HR strategies to increase firm performance, Investment Perspectives of HR- Investment Consideration, Investments in training and development, Investment Practices for Improved Retention, Investments Job Secure Work Courses, Non-traditional investment Approaches. Change Management and Knowledge Management (Only Concepts).

Module–2: Managing Strategic Organizational Renewal- Managing Change and Organizational Development - Instituting TQM programs - Creating Team-Based Organizations – Human Resource Excellence (HRE) and Business Process Reengineering ((BPR) - Flexible Work Arrangement- Establishing Strategic Pay Plans - Pricing Managerial and Professional Jobs - Compensation Trends - Objectives of International Compensation - Approaches to International Compensation - Issues related to Double Taxation –case studies.

Module -3: Managing Global Human Resources - HR and the Internationalization of Business - Improving International Assignments through Selections - Training and development - Maintaining International Employees - Developing International Staff and Multi-National Teams

Module -4: Multi-National - Global and Transnational Strategies - Strategic Alliances - Sustainable Global Competitive Advantage - Globally Competent Managers Location and Production Facilities- Repatriation process - Current trends in SHRM, Virtual teams, Global inter dependence, Case Studies.

5. **Skill Development Components**:

- Student's visit any organization and submit a report on their H R practices and strategies adopted.
- Students visit an MNC companies and study their international assignments on Selection, and training process.

6. Course Outcomes:

CO 1: Understand and discuss concepts of SHRM.

CO 2: Application of SHRM techniques in various organizational situations

CO 3: Evaluate the strengths and weaknesses of SHRM practices in organizations.

CO 4: Identify and assess ethical, environmental and/or sustainability considerations in SHRM decision-making and practice.

CO 5: Enlighten top executives on linkages between global and domestic HRM

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	-	-	-	-	-	-
CO2	1	3	-	-	2	-	-	-
CO3	1	3	-	-	2	-	-	-
CO4	2	2	-	3	1	-	-	-
Weighted Average	**1.75**	**2.75**	-	**0.75**	**1.25**	-	-	-

References

1. Agarwala Tanuja, Strategic Human Resource Management, Oxford University Press, New Delhi.
2. Dhar, Rajib Lochan. (2008). Strategic Human Resource Management, Excel Books, New Delhi.
3. Tapomoy Deb, Strategic Human Resource Management, Atlantic Publishers, New Delhi.
4. Rajib Lochan Dhar, Strategic Human Resource Management, Excel Books, New Delhi.
5. Mohsin Shaikh, Essentials of Strategic Human Resource Management, Banyan Tree Consulting, Pune.
6. Armstrong, Michael & Baron Angela, Handbook of Strategic HRM, Jaico Publishing House, New Delhi.
7. Mello, Jeffrey A, Strategic Human Resource Management, Cengage Publications, New Delhi.
8. Regis, Richard, Strategic Human Resource Management & Development, Excel Books, New Delhi
9. Charles Greer, Strategic Human Resource Management – A General Management Approach, Pearson Education, New Delhi.
10. 10 Catherine Truss, David Mankin and Clare Kelliher, Strategic Human Resource Management, Oxford University Press, New Delhi
11. 11.Peter j. Dowling, Denice E. Walch, Randell S. Schuler, International Human Resource Management Thomson south – western 2002.

SC16 - ELECTIVE GROUP E: MANAGEMENT ACCOUNTING

PAPER 1: MARGINAL COSTING AND DECISION MAKING

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per week

1. Course Description:

This course provides the coverage concept of cost behavior analysis, break even analysis, multi-product break even analysis, graphs, marginal costing and standard costing and managerial decisions.

2. Course Objectives:

- To understand various concepts and techniques used in cost marginal costing
- To provide an overview of marginal cost and applicability of marginal cost in various decision-making areas
- To understand standard costing and analyses of various overhead variance
- To understand about cost audit standards and cost audit

3. Pedagogy:

Course activities consist of lectures, case study analysis, group discussions, seminar presentation, assignment writing and tests. Solving problems and evaluating decisions involving the financial and cost data of selected firms will be integral part of instruction.

4. Course Contents:

Module 1: Break Even Analysis- Introduction: Meaning- Terminology- Scope & Concepts- Cost Behavior Analysis- Break Even Analysis- Approaches of Break-Even Analysis in Relation to Cost & Revenue. Factors- Multiproduct Break-Even Analysis- Assumptions Underlying Break Even Analysis- Limitations of Break-Even Analysis- Case Studies.

Module 2: Contribution Concepts & Short-Term Profitability Analysis: Profitability Analysis Under Constrained Conditions- Profit- Volume Ratio & Its Uses- Profit Volume Graphs – Case Studies.

Module 3: Marginal Costing & Managerial Decisions: Profit Planning- Pricing Decision- Production Decision – Make or Buy Decision -Joint & By-Product Decision – Distribution Cost Analysis – Case Studies

Module 4: Standard Costing: Objectives – Principles - Determination of Standards for

Material – Labor - Direct Expenses & Overhead Costs-Variable and Fixed Costs-Case Studies. Variance Analyses**:** Material – Labor - Overhead Variances - Sales & Profit Variances - Disposition of Variances - Assessing the Significance of Standard Cost Variance - Standard Cost Accounting - Cost Audit Standards - Case Studies

Skill Development:

- Visit any manufacturing industries and collect cost related information, analyse the same and write a summary of report for management decision making.
- Select any five manufacturing industries in Mysore and collect cost related information. Further, prepare cost-volume-profit analysis as a management tool for decision making

Course Outcomes

CO-1 : Application of tools and techniques of marginal costing in managerial decision making

CO-2 : Practical knowledge on overhead analysis and its appropriate Applicability

CO-3 : Enhance knowledge on application of Costing standards in Cost Audits.

CO-4: Preparation of Break-Even chart for taking managerial decisions.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	2	3	-	-	2	-	-	-
CO2	2	3	-	-	-	-	-	-
CO3	2	3	-	-	2	-	-	-
CO4	2	3	2	-	-	-	-	-
Weighted Average	**2**	**3**	**0.5**	-	**1**	-	-	-

References:

1. Management Accountancy: J. Batty :ELBS
2. Cost Accounting- A Manorial Emphasis: C.T.Horngel
3. Cost Analysis for Management Decisions: M.R.S. Murthy : Tata Mc GrawHill
4. A Dictionary of Managerial Finance, G. Kotreshwar, Chandana Publications (2014), Mysore.

IV SEMESTER

HC 10: INTERNATIONAL ACCOUNTING

Total Credits:4 **Credit Pattern: 3:1:0** **No of hours:5**

1. Course Description:

This course is designed to provide a deeper understanding of international accounting issues related to global financial reporting. It focuses on major diversities and challenges of financial reporting in the global arena, harmonization and international financial reporting standards. It also covers accounting for foreign currency transactions and major translation methods. It focuses on main issues in international financial statement analysis.

2. Course Objectives:

- To provide knowledge of international accounting practices in changing environment,
- To understand role of IFRS as a standard board to bring harmony in international accounting.
- To analyze difficulties in transaction entries with respect to companies' exposure in different markets.
- To understand applicability of harmonization in MNC's through accounting practices
- To understand implication of XBRL in financial reporting across the world.

2. Pedagogy:

Method of instruction consists of lectures, analysis of international financial statements, group discussions, seminar presentations, writing assignments and tests. Reading and analysis of annual reports of multi-national organizations will be integral part of instruction.

3. Course Contents:

Module 1: An Introduction to International Accounting: Definition - need and scope of international accounting - Factors that contribute to accounting diversity at the international level - Harmonization of accounting - International Financial Reporting Standards - Ethical issues in International Accounting - Analysis of annual reports and case studies

Module 2: Accounting for Foreign Exchange Rate Fluctuations: An overview of foreign currency markets and exchange rates - Foreign exchange exposure-transaction, translation and operating - Accounting for foreign currency transaction-Spot and Forward

foreign currency transactions - Single-transaction approach and Two-Transaction Approach - Functional versus Reporting currency - Foreign currency translation methods- Current rate method - Current/Non-Current method - Monetary/Non-Monetary method and Temporal method - Problems and Case study analysis

Module 3: International Transfer Pricing: Evolution - Meaning and Objectives of transfer pricing - Determinants of International Transfer Pricing -Major stakeholders affected by transfer pricing policies - Arm's Length price (ALP) - Steps in the process of computing ALP-ALP methods - Comparable Uncontrolled price method (CUP)- Resaleprice method (RPM) - Cost Plus method (CPM) - Profit Split method(PSM) - Transaction Net margin method(TNMM). Problems and Analysis of Case Studies.

Module 4: XBRL for International Financial Reporting: Framework of extensible Business Reporting Language. International XBRL Taxonomy Architecture - The IFRS XBRL Taxonomy - The US GAAP XBRL taxonomy etc. - XBRL implementation in countries around the world - Analysis of Case Studies.

Skill Development Components:

- Student's visit an organization and collect data related to the transfer pricing methods adopted.
- Students will solve case study on translation method.

Course Outcome:

CO1: Familiarize and understand the International Financial Reporting Standards (IAS or IFRS) and its application.
CO2: Application of different types of financial exposures in IFRS.
CO3: Enhance the knowledge on the Transfer Pricing policy in international business
CO4: Application of XBRL software in financial reporting.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	-	-	2	-	-	-
CO2	2	3	2	-	-	-	-	-
CO3	3	3	-	-	-	-	-	-
CO4	2	3	3	-	-	-	-	3
Weighted Average	**2.5**	**3**	**1.25**	-	**0.5**	-	-	**0.75**

References:

1. International Accounting by Shirin Rathore, Prentice-Hall of India,
2. New Delhi
3. Comparative International Accounting by Christopher Nubs and Robert Parker, Pearson Education Asia, New Delhi.
4. Timothy Doupnik and Hector Perera. International Accounting, 4th Edition, McGraw-Hill Education.2015
5. International Accounting: A User Perspective by Shahrokh M. Saudagaran, South-Western Thomson Learning,Australia.
6. International Accounting by A.K.DasMohapatra, Prentice-Hall of India, New Delhi
7. The Analysis and use of Financial Statements by GerladI. White, Ashwini paul C. Sondhi and Dov Fried, John Wiley, New York.
8. The Economic Times, The Business Line and Financial Express daily papers.
9. Journals on International Accounting.
10. Websiteswww.iasb.org.
11. www.worldbank.org.
12. www.unctad.org. etc.
13. w.w.w.xbrl.org.

HC 11: STRATEGIC MANAGEMENT

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per week

1. Course Description:

This course provides the coverage of concept of strategic management, vision, mission and purpose of business definition, strategic analysis and choice strategic implementation and evaluation.

2. Course Objectives:

- To integrate the knowledge of functional areas of management.
- To help students to learn formulate and implement strategy.
- To evaluate the influence of internal and external factors in policy formulation.
- To understand importance of review of strategies before implementation and its evaluation.
- To expose students to various perspectives and concepts in the field of Strategic Management
- The course would enable the students to understand the principles of strategy formulation, implementation and control in organizations.
- To help students to develop skills for applying these concepts to the solution of business problems

- To help students master in the analytical tools of strategic management

3. Pedagogy:

Teaching method comprises of lecture sessions and tutorials. Lecture sessions focus on providing conceptual understanding and analytical setting for select aspects of the course content.

4. Course Contents:

Module 1: Strategic Management: Introduction to Management and Strategy, Need for Strategic Management- Strategic Management process – Strategic management in Business units – Corporate, divisional and functional level strategies, Strategic Management in Non -profit Organizations, - Participants in Strategic Management – Strategic Decision Making- Process of Strategic Decision Making, Strategic Planning- process of strategic planning, Strategic Formulation and Analysis- Vision, Mission, Goal and Objectives ,- Case Studies.

Module 2: Strategic Analysis and Choice: Environmental Analysis – Concepts of Strategic Choice, - Steps in the Process of Strategic Choice- Techniques used for Strategic Analysis-- Corporate Portfolio Analysis - Environmental Threat and Opportunity Profile (ETOP) – Boston Consultancy group (BCG) Matrix – General Electronics 9 Cell Matrix - Porter's Five Forces Model of competition –McKinsey's 7s Framework Model - Case Study.

Module 3: Strategy Implementation: Formulation of Strategy at Corporate, Business and Functional Levels, - Interrelationship between Formulation and Implementation. Issues in Implementation of Strategies - Project implementation –Procedural implementation - Resource Allocation - Budgets - Organization Structure –Matching structure and strategy - Behavioral issues - Leadership style – Corporate culture - Values - Power - Social responsibilities – Ethics, Case Study- Case Study.

Module 4: Strategy Evaluation: Concept and purposes of strategic evaluation and analysis, GAP analysis; Role of organizational systems in evaluation, Strategic Control and Operational Control: Types of Strategic Controls, Process of Operational Control - Evaluation Techniques for Strategic and Operational Control-- Case Study.

Skill Development Components:

- Conduct survey and collect data relevant to the vision, Mission, Goal, and objectives

of an organization.

- Students submit an organizational structure and strategy adopted in that organization.

Course Outcome:

CO1: Enlightening the top echelons on the linkages between vision, mission and strategies

CO2: Develop strategies keeping core competencies acquired over the years

CO3:Develop competitive building blocks and design approaches to increase Competitive advantage

CO4: Enlighten all stake holders on the linkages between strategy formulation, implementation and evaluation

CO5: Identify endogenous and exogenous forces influencing strategic decision making

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	-	-	-	-	-	-	-
CO2	-	2	-	3	-	-	-	-
CO3	-	3	-	2	-	-	-	-
CO4	-	3	-	-	-	-	-	-
Weighted Average	**0.75**	**2**	-	**1.25**	-	-	-	-

References:

1. A concept of corporate planning-, RusselAckoff, Newyork wiley
2. Business policy and strategic management- Tokyo, McGraw hill
3. Strategic Management-Text and Cases- V.S.P. Rao and V.Harikrishna
4. Strategic Management-Azar Kazmi
5. Strategic Management-Francis Cherunillam
6. Strategic Management-Subba Rao
7. Strategic Planning Formulation of Corporate Strategy -Ramaswamy
8. Strategic Management, 12th Ed. - Concepts and Cases - Arthur A. Thompson Jr. And A.J. Strickland
9. Management Policy and Strategic Management (Concepts, Skills and

Practices R.M. Shrivastava

10. Strategic Management –Pearce

11. Strategy & Business Landscape –Pankaj Ghemawat

SC 17: FOREIGN EXCHANGE MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

1. Course Description:

This course focuses on the international financial environment, foreign exchange flows, foreign exchange markets and payments.

2. Course Objectives:

The objective of this course is to understand the nature and functioning of foreign exchange markets, the determination of exchange rates and their forecasting in Indian context. The course enables the students to learn the basic skills required to be part of a foreign exchange division of any financial institution or state department.

3. Pedagogy:

The course is taught through the lecture and discussion mode. Practical exercises including actual calculation of exchange rates as well as interaction with foreign exchange divisions of banks would be part of the learning exercises.

4. Course Contents:

Module -1: Foreign Exchange Management- International Monetary System-International Financial Markets-Currency Basket, Currency Convertibility –. Foreign Exchange Rates- Direct and Indirect Quotes - Spot and Forward Foreign Exchange Markets-, Exchange Rates Determinations - Arbitrage Profit in Foreign Exchange Markets.

Module -2: Foreign Exchange Exposure-Management of Transaction Exposure-Management of Translation Exposure- Management of Economic Exposure-Management of Political Exposure-Management of Interest Rate Exposure.

Module -3: Foreign Exchange Rate Determination- Theories of Exchange Rate Determination- Measuring Exchange Rate Movements-Exchange Rate Equilibrium –

Factors Effecting Foreign Exchange Rate- Determination Foreign Exchange Rates- Interest Rate Parity- Purchasing Power Parity & International Fisher Effect- Covered Interest Arbitrage

Module -4: Foreign Exchange Risk Management-Hedging Against Foreign Exchange Exposure – Forward Market- Futures Market- Options Market- Currency Swaps-Interest Rate Swap-Hedging Through Currency of Invoicing- Hedging Through Mixed Currency Invoicing –Country Risk Analysis.

Skill Development:

- Examine and make report on the foreign exchange risk faced by selected banks and their customer
- Examine and evaluate various foreign exchange risk management hedging and strategies

Course Outcomes

CO-1: Acquisition of conceptual knowledge on international monetary system

CO-2: Overview on FOREX management and FOREX reserve

CO-3: Application of hedging against foreign exchange exposure

CO-4: Forecasting foreign exchange rates using various techniques.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	-	-	-	-	-	-	-
CO2	3	2	-	-	3	-	-	-
CO3	2	2	-	-	2	-	-	-
CO4	1	3	-	-	2	-	-	-
Weighted Average	**2.25**	**1.75**	-	-	**1.75**	-	-	-

References:

1. Foreign Exchange Management and International Finance-Vivek Vishwan V-Viva Books Publication
2. Foreign Exchange & Risk Management- C Jeevanandam- Sultan Chand and Sons Publication
3. Foreign Exchange Management Manual-Taxmann Publication
4. Foreign Exchange Management-Richa Garg- Vrinda Publications (p) Ltd
5. Practitioner's Guide to Foreign Exchange Management- C.A. Sudha and G. Bhushan, Wolters Kluwer- Publication.

SC18: PROJECT WORK

Project Work would be commenced from the beginning of the fourth semester. Work load for Project Work guidance is 1 hour per batch of 4 students per week. Allotment of Guides shall be made in the beginning of the third semester. Students should select the topic in consultation with the guide during the third semester and complete the project in fourth semester.

SC 19 - ELECTIVE GROUP A: BUSINESS TAXATION

PAPER 2: CORPORATE TAX LAW AND PLANNING

TotalCredits:4 Credit Pattern: 3:1:0 No of hours:5 per week

1. Course Description:

This course is focus on different heads of income, taxable in the hands of companies, computation of grass total income, deduction, exemptions, set off and carry forward of loss. Tax planning relating to various managerial decisions for reducing the tax burden, allocation of investments, and maximize the company wealth. As a tax consultant of the corporate tax laws of the company to give advice to the drawing officers regarding TDS, advance payment of tax and remittances of tax, for his employees.

2. Course Objectives:

This course is intended to enable the students to:

- Understand the incidence based and residential status of the companies.

- Understand the different sources of income for corporate assesses.
- Analyze the tax planning to reduce the tax burden of the corporate Assessee
- Understand TDS, advance payment of Tax, remittance of corporate income tax, preparation of various tax returns and Forms.
- To understand assessment procedure and tax filing

1. Pedagogy:

The course content is covered class room lecture, remedial class for non-tax students, student seminar, case discussion, and work out the problem on the company problems as student, as consultant and as a tax authority and also visiting company and tax office for practical exposure.

2. Course Contents

Module 1: Introduction: Basic Framework of Corporate Tax Laws-Types of Company-Residential status of a Company and Incidence of Tax -Corporate Tax Planning-, Tax Evasion and Tax Avoidance. Tax Planning & Tax Management.

Module 2: Computation of Taxable Income- Computation of taxable income under different heads of income - House property - Profit and Gain from Business or Profession - Capital Gain and Income from Other Sources - Treatment of Corporate Loss - Carry Forward and Set-off of Losses - Deductions, Exemptions and Concisions from Gross Total Income - Minimum Alternative Tax Sec 115 JB - Importance and Objectives - Calculation on Book Profit -Case Studies.

Module 3: Tax Planning and Managerial Decision: Tax Planning Relating to Capital Structure - Make or Buy **-** Buy or Lease- Own or Lease - Purchase by Installment or by Hire – Shut Down or Continue Operations.

Module 4: Procedure for Assessment- Assessment Types- Hierarchy of Tax Authority Deduction of Tax at Source (TDS) - Duties and Responsibilities of TDS Officer - Collection of Tax at Source (TCS) - Remittance of Tax - Advance Payment of Tax- Tax Returns – Refunds - Appeals and Revisions - Preparation and Issue of Different Forms for Tax Collection - FORM-16 and FORM 3CA- 3CB and 3CD - Case Studies.

Skill Development

- Evaluate selected companies corporate tax planning and managerial decision making in terms capital structure and make or buy decision.
- Visit an audit office and practice corporate assesse return filing, TDS and TCS and other various practical aspects

3. Course Outcomes

CO-1: Knowing overview of corporate tax system in India

CO-2: Exposure on practical approaches towards taxable income of the company

CO-3: Application of Income tax rules in managerial decisions such as, make or buy, dividend decisions, etc.

CO-4: Online filing of returns for corporate assesse

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	-	-	-	-	-	-
CO2	2	3	-	-	-	-	-	-
CO3	3	3	-	-	-	-	-	-
CO4	2	3	3	-	-	-	-	3
Weighted Average	**2.5**	**2.75**	**0.75**	-	-	-	-	**0.75**

References:

1. Direct Taxes-H.C. Mehrotra and Dr.S.P. Goyal -Sahitya Bhavn Publication.
2. Corporate Tax Planning & Business Tax Procedures-Vinod K Singhania & Monica Singhania-Taxmann Publication
3. Simplified Approach to Corporate Tax Planning & Management-Dr Girish Ahuja-Bharat's Publication.Master Guide to Corporate Taxation-O. P Yadav- Lexis Nexis
4. Corporate Tax Planning and Management- Lakhotia-Vision Publishers

SC 20: ELECTIVE GROUP B – FINANCIAL ACCOUNTING

PAPER 2: CONTEMPORARY AREAS OF FINANCIAL ACCOUNTING

Total Credits: 4 per week **Credit Pattern: 3:1:0** **No of hours: 5**

1. **Course Description:** This course provides detailed insight into contemporary area of accounting includes human resource accounting, Investment Accounts, Price Level Accounting and Environmental Accounting.

2. Course Contents

Module-1: Human Resource Accounting – Importance - HRA for Managers & HR Professionals - Investment in Human Resources –Approaches Of HRA-Historical Cost Approach-Replacement Cost Approach-Opportunity Cost Approach-Standard Cost Approach-Present Value Approach-The Economic Value Approach-Monetary Value and Non-Monetary Measures for Assessing Individual

Module-2: Investment Accounting - Fixed income bearing securities- Variable income bearing securities- Purpose of Investment ledger-Cum Interest- Ex Interest- Difference-Columnar Investment Accounts- Adjustment for Equity shares Investment accounts-Dividend Received-Bonus share- Right Shares.

Module-3: Price Level Accounting: Meaning and Scope-Inflation Accounting-Methods of Accounting for Changing Prices-Methods of Accounting for Changing Prices-Current Purchasing Power (CPP) Method-Current Cost Accounting Method (CCA) Method-Hybrid Method.

Module-4: Environmental Accounting: Introduction -Methodology of Environmental Accounting-Objectives of Environmental Accounting- Forms of Environmental Accounting-Environmental Issues Under the Expanded Model of Accounting.

Skill Development:

- Analyse the impact of price level changes on balance sheet position of a company.
- Analyse the impact valuation of human Assets on the Balance sheet of a company.

Course Outcomes:

C01- Provide Detailed insight of Human resource Accounting.

C02 -Understand concept of Accounting for Bonus shares, right shares and dividend.

C03-Application of different methods of Inflation accounting.

C04-Understand the concept of environmental accounting.

- **Course Articulation Matrix**

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	2	2	-	-	-	-	-	-
CO2	2	1	-	-	-	-	-	-

CO3	1	3	-	-	-	-	-	-
CO4	3	3	-	2	-	-	-	-
Weighted Average	**2**	**2.25**	-	**0.5**	-	-	-	-

Reference

1. Eric G. Flamholtz, Human Resource Accounting, Springer
2. Jac Fitz-enz, How to Measure Human Resource Management, McGraw Hill 3. Rakesh Chandra Katiyar, Accounting for Human Resources, UK Publishing
3. M. Saeed, D.K. Kulsheshtha, Human Resource Accounting, Anmol Publications.
4. D. Prabakara Rao, Human Resource Accounting, Inter India Publications.
5. Chandra, P., Financial Management - Theory and Practice, New Delhi, Tata McGraw Hill Publishing Company Ltd.
6. Contemporary Environmental Accounting, Schaltegger and Burritt (S&B)

SC 21 -ELECTIVE GROUP C: FINANCIAL MANAGEMENT

PAPER 2: FINANCIAL DERIVATIVES

TotalCredits:4 **Credit Pattern: 3:1:0** **No of hours:5**

1. Course Description:

The course is designed to provide basic knowledge about risk management and the new instruments of capital market i.e., financial derivatives used for managing risk. It mainly comprises of a description of the concepts of risk management, forwards/futures, options and swaps along with the trading mechanics and pricing of these instruments.

2. Course Objectives:

- To understand role and importance of risk management in hedging market and unsystematic risks.
- To understand the new evolution of commodities market in capital market.
- To critically understand and appreciate the role of derivatives market.
- To understand different valuation models to determine premium of options contract.
- To describe the role of swaps to hedge interest rate and currency risk.

3. Pedagogy:

Class room teaching of basic derivative concepts shall be followed by a series of individual seminar presentations, group seminars, discussions and case study analysis relating to futures, options and swaps. Assigned problems are to be worked on an individual basis, followed by group discussion of case problems.

4. Course Contents:

Module 1: Introduction to Derivatives: Types-Forwards - Futures - options – swaps - structure and operations, trading mechanisms, regulatory framework - Exchanges – Contract specification- Clearing house - Floor brokers - Initiating trade –mode of delivery of derivatives contract-short and long position.

Module2: Future and Forward Contracts: Structure of future and forward contracts -FRAs- Valuation of forward and future prices - Margins - Initial margins - Variation Margins-Maintenance margin-Cost of carry, Stock index futures - Valuation of stock index futures - hedging using stock index future contracts - Adjusting Beta of a portfolio using stock -Short hedge and long hedge using futures- Interest rate futures and currency futures.

Module 3: Options: Trading in Options –factors impacting Option Prices - Pricing of Options - Models of valuation - Binomial and Black-Scholes model-Straddles-strangle-protective put and call options-Bull-Bear spread- The Greeks.

Module4: Swaps: Evolution **-** Types of Swaps-Currency Swaps-Interest Rate Swaps - Designing Currency and Interest Rate Swaps - Valuation of Swaps.

Skill Development

1. Trading in stock and index futures and options.
2. Analyzing option premium with live examples using black Scholes model.
3. Learning the worth of options using ITM, ATM and OTM.
4. Understanding of margin requirements and M2M concept.
5. Trading in stock and index futures and options.
6. Analyzing option premium with live examples using black Scholes model.
7. Learning the worth of options using ITM, ATM and OTM.
8. Understanding of margin requirements and M2M concept.

Course Outcomes:

CO1 Understand the various financial derivative instruments such as options, futures, swaps and other derivative securities.

CO2 Application of derivative instruments in managing the risk of investing and hedging activity at the individual and the corporate level.

CO3 Comprehend the economic environment in which derivative instruments operate.

CO4 Employ theoretical valuation methods to pricing of financial derivative instruments by using different valuation models

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	-	-	-	-	-	-	-
CO2	2	3	1	-	2	-	-	2
CO3	2	2	-	-	-	-	-	
CO4	2	3	1	-	2	-	-	1
Weighted Average	**2.25**	**2**	**0.5**	-	**1**	-	-	**0.75**

References:

1. Introduction to Futures and Options Markets – By John Hull(PHI)

2. Derivatives and Risk Management- Dr. R P Rustagi

SC 22 -ELECTIVE GROUP D: HUMAN RESOURCE MANAGEMENT

PAPER 2: INDUSTRIAL RELATIONS & COLLECTIVE BARGAINING

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

1. **Course Description:** Through this course, students will get familiarize with industrial relations, its importance and collective bargaining procedure.

2. **Pedagogy:**

The Pedagogy consists of Lectures, Shared Experience, Case Study, Role Play, Assignment, Fieldwork/ Practical's, Seminars and Presentations.

3. **Course Contents:**

Module 1: Industrial Relations: Concepts, definition and importance, factors affecting IR, approaches to IR, Impact of technology on IR, Trade Unions: nature, benefits problems and remedies, Trade Union Act 1926, Industrial dispute Act 1947, quality circles.

Module 2:. Collective Bargaining: concept, its relevance in IR, CB as an institution, ILO perception of CB, Objectives of CB, Structure, Functions, process, negotiations, bargaining approaches & techniques, patterns of bargaining.

Module 3: Industrial conflicts: meaning and causes, types, strikes and lockouts, machinery for resolving industrial disputes under law. Workers participation in Management: concepts, objectives, types, growth and development of workers participation in management.

Module 4:. Grievances and Disciplines: grievances, redressal, discipline, standing orders, acts of misconduct, show cause notice, suspension, Enquiry procedure, Principles of natural justice, Punishments, Demotion suspension, Termination, Removal and dismissals, Conflicts Industrial disputes Lay off, Termination simplicitor, Retrenchment, closures, VRS.

Course Outcomes:

C01- To help students acquire solid theoretical, practical and ethical perspective on various¬ aspects of IR.

C02-To make the student aware of the present state of IR in India.

C03-To Understand the various processes and procedures of handling Employee Relations.

C04-To be acquainted with the concepts, principles and issues connected with Trade Unions,¬ Collective Bargaining and Grievance redressal

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	-	3	-	-	-	-
CO2	2	3	-	-	-	-	-	-
CO3	2	3	-	-	-	3	-	-
CO4	3	3	-	-	-	-	-	-
Weighted Average	**2.5**	**3**	**-**	**0.75**	**-**	**0.75**	**-**	**-**

References:

- Industrial Relation - Ramaswamy
- Industrial Relation - Sharma
- Industrial Relation - Venkatarathnam
- Industrial Relation - Arun Monnappa
- Industrial Relation -T V Rao

SC23 - ELECTIVE GROUP E: MANAGEMENT ACCOUNTING

PAPER 2: COST MANAGEMENT

Total Credits:4 Credit Pattern:3:1:0 No of hours:5 per week

1. Course Description:

This course provides the coverage of a broader framework of various tools and strategies used for cost management and control.

2. Course Objectives:

The course is aimed at helping the students to:

- To understand the scope and need for cost control and management.
- To provide an understanding the basic cost control and management tools.
- Understand the importance of statistical tools and operation research in cost control and management

3. Pedagogy: Course activities consist of lectures, case study analysis, group discussions, seminar presentation, assignment writing and tests.

4. Course Contents:

Module 1: Cost Management- Cost Management System- Cost Management- Components of Cost Management- Activity Based Costing (ABC)-Activity-Based Management (ABM)-Concept and Uses- Relationship between ABC and ABM; Operational ABM and Strategic ABM; Techniques of ABM; Implementation Steps in ABM.

Module 2: Pricing Strategies- Factors Influencing Pricing Decisions- Short Run V/s. Long Run Pricing Strategy- Cost-Based Pricing- Economic Approach to Pricing- Pareto Analysis in Pricing Decisions-Activity-Based- Budgeting (ABB)- ABB and Traditional Budgeting- ABB Process- Capacity Utilization- Role of ABB in Cost Management.

Module 3: Cost Analysis- Job and Process Cost– Cost Estimation and Regression Analysis – and Cost Volume Profit Analysis.

Module 4:Application of Operation Research and Statistical Tools-Linear Programming- Network Analysis- Assignment- Transportation and Time Series Analysis- Time Series Analysis Including Moving Totals and Averages.

Skill Development:

- Visit any manufacturing industry and collect information on activity-based costing and activity-based management, analyse the same and write a summary of report on combination of ABC and ABM will play a role in cost controlling.
- Select any one manufacturing industry and collect cost related information. Further, prepare report on process costing.

Course Outcomes

At the end of the course, the students will be able to know:

CO-1: Application of tools and techniques in activity-based cost for managerial decision

CO-2: Practical approaches on cost volume profit analysis

CO-3; Theoretical and practical approaches on various Pricing strategies

CO-4: Application of operation research and statistical tools in cost management.

Course Articulation Matrix

CO\PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	2	3	-	-	2	-	-	-
CO2	2	3	-	-	2	-	-	-
CO3	3	3	-	-	3	-	-	-
CO4	2	3	3	-	3	-	-	3
Weighted Average	**2.25**	**3**	**0.75**	**-**	**2.5**	**-**	**-**	**0.75**

References:

1. Cost Management: A strategic Emphasis, Blocher, Chen, Lin McGraw Hill
2. Cost Analysis for Management Decisions: M.R.S. Murthy, Tata McGraw Hill
3. Cost Accounting A Managerial Emphasis: Charles T Horngren, Srikant, PHI.
4. Principles & Practices of Cost Accounting: Ashish K. Bhattacharya A. H. Wheeler Publisher
5. Quantitative Techniques in Management: N.D. Vohra Tata McGraw Hill Book Co. Ltd.

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SBRR Mahajana First Grade College (Autonomous)
PG Wing Pooja Bhagavat Memorial Mahajana Education Centre
KRS Road, Metagalli, Mysuru-570016
Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

DEPARTMENT OF SOCIAL WORK

MASTER OF SOCIAL WORK - MSW

SYLLABUS

SBRR Mahajana First Grade College [Autonomous] PG WING
Pooja Bhagavat Memorial Mahajana Education Centre
KRS Road, Metagalli, Mysuru 570 016

Regulations of the Programme Master of Social Work (MSW)

Preamble:

Social Work is a relatively young discipline among Social Sciences. It is a help rendering profession. Social Work teaches the art and science of rendering help to people in need of such help. Its philosophical premise is that Every Individual is worthy and capable. This profession is most suited for all those who are interested in bringing a difference among the people, society and the world around them.

The MSW programme offered by the SBRR Mahajana First Grade College PG Wing aims to train young graduates in the art and science of Social Work discipline. The two years, four semester course is a combination of theory and field work components. The department of Social Work, through its professional training in field work and application of theory into practice facilitates its students to become competent professional social works who can be readily absorbed by the job market. The student can also pursue M.Phil and Doctoral programme after the completion of the MSW programme. The opening for the trained social workers are in varied fields such as Industries, Hospitals, Communities, Correctional settings, Governmental welfare sectors, Family and Child welfare, non- governmental sector and many more.

1.Title of the Programme:

The programme shall be called ' Master of Social Work' (MSW).

Duration of the Programme:

The programme of study **for MSW Degree** shall extend over a period of four semesters spreading over two academic years. A candidate can avail maximum of 8 semester – 4 years (in one stretch) to complete master Degree (including blank semesters, if any).Whenever a candidate opts for blank semesters, he/she has to study the prevailing courses offered by the department when he/she continues his/her studies.

2.Period of the Programme:

Semester I and III July to December

Semester II and IV from January to June

3.Objectives of the Programme (Master of Social Work):

A) To provide education and training in social work to those desirous of making a career in social work practice.

B) To provide opportunities through intensive field practicum to work with variety of people in their development and provide service to those who are in need of it.

C) To provide inter-disciplinary collaboration for better understanding of human problems, services and issues related to human development.

4. To link theory with practice in every sphere of human service endeavors.

5. To develop requisite knowledge, skills and values in working with people.

6. To promote among learners a sense of responsibility and commitment to work with different sections of people and especially of the vulnerable sections of the society

7. To promote opportunities and to create awareness for personal growth.

8. To acquire knowledge and skills in undertaking practice-based research and to administer human service organizations.

9. To develop Professional Social Workers towards socio- economic and culturally responsible.

4.SOCIAL WORK PRACTICUM

The practicum with different learning opportunities is designed to provide scope to develop and enhance professiona1 practice skills. Learning is aided through observation, analysis of social realities and experience of participation in designing and providing social work intervention.

The tasks are organized to help the learner acquire beginning skills, practice those already acquired, and master them from simple to complex. The learner is gradually encouraged to become an independent worker during the course of study.

Objectives:

The objectives are met by providing a variety of experiences to learners to:

1. i . Develop the ability to observe and analyze social realities.
   ii. Understand the characteristics of social systems and their dynamics.
   iii. Appreciate society's response to people's needs, problems and social issues.
   iv. Develop critical understanding of the application of legislation, legal process, and social policy.
2. i. Develop the ability to examine the process of programme management and participate in the effort at various levels.
   ii. Develop the ability to recognize the need for never programs, initiate and participate in them.
   iii. Use Human Rights tools, understanding of gender justice, and need for equity in all intervention.
   iv. Develop an understanding of organizational structure, resource management, and day-to-day administration for human service programmes - developmental and welfare programmes
   v. Develop the capacity to integrate knowledge and practice – theory by participating in intervention.
3. i. Clarify and imbibe values which sustain positive attitude and professional ethics.
   ii. Develop the capacity for self - direction, growth and change through self awareness.
4. i. Enhance writing skills to document practice appropriately. Recordings to be viewed as an expression of interest, motivation and involvement in practice and as evidence of enrichment in the process of professional growth.

To meet these outcomes, several opportunities with specific objectives are designed. The different sets of opportunities with details of content and related tasks are listed separately.

5.Eligibility for Admission

Candidates who have passed BSW/ BA/ B.Sc. / B.Com. / BBA/BBM/ B.C.A / LLB of the University of Mysore or any other university recognized as equivalent there to, are eligible for

admission to MSW course. Candidates will be selected for admission as per the general guidelines issued from the University of Mysore from time to time. The Department/University shall conduct entrance examination for admission to the course.

A minimum of 45% aggregate marks for GM and 40% aggregate marks for SC/ST in the qualifying examination is needed to appear for the entrance examination and as well as eligibility for the course.

The examination is of two hour duration and the question paper comprises of 100 objective type questions - 20% questions from general knowledge, 60% from science & social sciences, and another 20% questions will be from present social issues. Merit will be assessed on the basis of performance in the entrance examination and performance in the undergraduate examination on equal weightage.

Note: Four seats shall be allotted to Graduates in Social Work of the University of Mysore and one seat shall be allotted to Graduates in Social Work of other University. The unfilled seats, if any, shall be shifted to the general category.

Scheme of Instructions:

6. Credits (Minimum) Matrix:

A candidate has to earn a minimum of 76 credits, for successful completion of a Master Degree. The 76 credits shall be earned by the candidate by studying Hardcore, Soft core and Open Elective.

A candidate admitted to Masters of Social Work programme can exercise an option to exit with Bachelor Honors Degree/ PG diploma after earning 40 credits successfully.

A candidate can enroll for a maximum of 24 credits per semester.

Only such candidates who register for a minimum of 18 credits per semester in the first two semesters and complete successfully 76 credits in 4 successive semesters shall be considered for declaration of ranks, medals.

In excess to the minimum of 76 credits for masters degree in the concerned discipline / subject of study, a candidate can opt to complete a minimum of 18 extra credits to acquire **add on proficiency diploma** in that particular discipline / subject along with the masters' degree. In such of the cases wherein, a candidate opts to earn at least 4 extra credits in different discipline / subjects in addition to a minimum of 76 credits at masters level as said above then an **add on proficiency certification** will be issued to the candidate by listing the courses studied and grades earned.

7. Degree Awarding:

On successful completion of Two year programme, the students will be awarded the **Master of Social Work Degree by the University of Mysore**.

8. Attendance and Conduct:

Master of Social Work is a full time programme and students SHALL NOT take up any employment/course, part time or full time during their study. Students found violating this rule shall be removed from the course. Minimum attendance of 75% of actual working hours in all the courses is required. A student who does not satisfy the requirements of attendance and conduct shall not be permitted to write examination.

9. Medium of Instruction:

The medium of instruction shall be English. However a candidate will be permitted to write the examination either in English or in Kannada.

10. CHOICE BASED CREDIT SYSTEM (CBCS):

Definitions:

Course- The course is governed by the regulations of Choice Based Credit System.

Every Course offered will have three components associated with teaching-learning process of the course, namely (i) Lecture - L (ii) Tutorial – T (iii) Practical – P , where

L Stands for lecture session,

T stands tutorial session consisting participatory discussion / self-study/ desk work/ brief seminar presentations by students and such other novel method make a student to absorb and assimilate more effectively the contents delivered in the Lecture classes.

P stands Practical session and it consists of hands on experience / Laboratory Experiments/ Field Studies/ Case studies that equip students to acquire the much required skill component.

In terms of Credits, every one hour session of L amounts to 1 credit per semester and a minimum of two hour session of T or P amounts to 1 credit per semester, over a period of one semester of 16 weeks for teaching-learning process. The total duration of a semester is 20 weeks inclusive of semester-end examination.

A course shall have either or all the three components.

The total credits earned by a student at the end of the semester upon successfully completing the course are L+T+P. the credit pattern of the course is indicates as L:T:P.

If a course is of 4 credits then the different credit distribution patterns in L: T: P: format could be

4 : 0 : 0,	1 : 2 : 1,	1 : 1 : 2,	1 : 0 : 3,	1 : 3 : 0,
2 : 1 : 1,	2 : 2 : 0,	2 : 0 : 2,	3 : 1 : 0,	3 : 0 : 1,
0 : 2 : 2,	0 : 4 : 0,	0 : 0 : 4,	0 : 1 : 3,	0 : 3 : 1,

The concerned BoS will chose the convenient credit pattern based on the requirements. However, generally, a course shall be of 3 or 4 credits.

Different courses of study are labeled and defined as follows.

Hard Core a course which should compulsorily be studied by a candidate as a core requirement

Soft Core is a course where there is a choice or an option for the candidate to choose a course from a pool of courses from the main discipline/ subject of study.

Open Elective an elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure.

An elective course designed to acquire a special/advanced knowledge, such as supplement study/support study to a project work, and a candidate studies such a course on his own with an advisory support by a teacher is called a **Self Study Elective**.

A core course offered in a discipline / subject may be treated as an elective by other discipline / subject and vice versa.

Project work/Dissertation work is a special course involving application of knowledge in solving / analyzing /exploring a real life situation / difficult problem. A project work up to 4 credits is called Minor Project work. A project work of 6 to 8 credits is called Major Project Work. Dissertation work can be of 10-12 credits. A Project/Dissertation work may be a hard core or a soft core as decided by the BoS concerned.

11. SCHEME OF EXAMINATION

The evaluation of the candidate shall be based on **continuous assessment**. The structure for evaluation is as follows:

Assessment and evaluation processes happen in a continuous mode. However for reporting purposes, a semester is divided into 3 discrete components identified as C1, C2 and C3.

The performance of the candidate in a course will be assessed for a maximum of 100 marks as explained as below:

The first component (C1), of assessment is for 15 marks. This will be based on test/assignment/ group study/field work/case analysis/seminar. During the first half of the semester, the first 50% of

the syllabus will be completed. This shall be consolidated during the 8th week of the semester. Beyond 8th week, making changes in C1 is not permitted.

The second component (C2) of assessment is for 15 marks. This will be based on test/assignment/ group study/field work/case analysis/seminar. The continuous assessment and scores of second half of the semester will be consolidated during the 16th week of the semester. During the second half of the semester the remaining units in the course will be completed.

At the end of the semester final examination of 3 hours shall be conducted for each course. This forms the third/ final component of assessment (C3) and the maximum marks for the final component will be 70. Pattern of question paper pattern is given in Appendix I.

Assessment of Social Work Practicum

A viva - voce examination shall be conducted for each candidate in all semesters. The performance of the candidate shall only be assessed by a committee consisting of one faculty member of the Department of Social Work of Pooja Bhagavat Memorial Mahajana Education Centre and an external examiner. The number of such committees depends on the number of candidates. In case of non-availability of a qualified teacher, the two-member committee constituted for viva-voce examination will stand.

Minor/Major Project Evaluation

Students are given broader guidelines for undertaking empirical evidence-based project in the fourth semester, either independently or by forming a small team comprising of three to four students which carries 4 credits. Evaluation of the Project will be done along with the viva-voce examination by the viva-voce committee constituted for the assessment of social work practicum or similar committee may be constituted, if required.

In case of a candidate secures less than 30% in C1 and C2 put together in a course, the candidate is said to have DROPPED the course, and such a candidate is not allowed to appear for C3 in that course.

In case a candidate's class attendance in a course is less than 75% , the candidate is said to have DROPPED that course, and such a candidate is now allowed to appear for C3 in that course. In case a candidate secures less than 30% in C3, he/she may choose DROP/Make-Up option.

A MAKE UP examination for odd semester courses will be conducted along with next regular odd semester examinations and for even semester courses along with a next regular even semester

examinations. If a candidate is still unsuccessful, he/she may opt for DROP or again take up Make UP examination: however, not exceeding double the duration norm in one stretch from the date of joining the course.

A candidate has to re-register for the DROPPED course when the course is offered again by the department if it is a hard core course. The candidate may choose the same or an alternative core/elective in case the dropped course is soft core/elective course. A candidate who is said to have DROPPED project work has to re-register for the same subsequently within the stipulated period. **The details of any dropped course will not appear in the grade card.**

If a candidate is not satisfied with the evaluation of C1 and C2 components, he/she can approach the grievance cell with the written submission together with all facts, the assignments, test papers etc., which were evaluated. He/She can do so before the commencement of semester end-examination. The grievance cell is empowered to revise the marks if the case is genuine and is also empowered to levy penalty on the candidate is his/her submission is found to be baseless and unduly motivated. This cell may recommend taking disciplinary/ corrective action on an evaluator if he/she is found guilty. The decision taken by the grievance cell is final.

12. Setting questions papers and evaluation of answer scripts.

I. Questions papers in three sets shall be set by the internal examiner for a course. Whenever there are no sufficient internal examiners, the chairman of BoE shall get the questions papers set by external examiners.

II. The Board of Examiners shall scrutinize and approve the question papers and scheme of valuation.

III. (i) There shall be single valuation for all theory papers by internal examiners. In case, the number of internal examiners falls short, external examiners may be invited.

   i. The examination for Practical work/ Field work/Project work will be conducted jointly by two internal examiners. However the BoE on its discretion can also invite external examiners if required.

   ii. If a course is fully of (L=0):T(P=0) type, then the examination for C3 Component will be as decided by the BOS concerned.

13. Challenge Valuation

A student who desires to apply for challenge valuation shall obtain a Xerox copy of the answer script by paying the prescribed fee within 10 days after the announcement of the result. He/She can challenge the grade awarded to him/her by surrendering the grade card and by submitting an application along with the prescribed fee to the Controller of Examination within 15 days after the announcement of the results. This challenge valuation is only for C3 component.

The answer scripts for which challenge valuation is sought for shall be sent to examiner. The marks awarded will be the higher of the marks obtained in the challenge valuation and in maiden valuation.

The grade and the grade point earned by the candidate in the subject will be as given below.

Marks	**Grade (G)**	**Grade point GP=V x G**
30 - 39	4	V*4
40 - 49	5	V*5
50 - 59	6	V*6
60 - 64	6.5	V*6.5
65 - 69	7	V*7
70 - 74	7.5	V*7.5
75 - 79	8	V*8
80 - 84	8.5	V*8.5
85 - 89	9	V*9
90 - 94	9.5	V*9.5
95 - 100	10	V*10

V is the credit value of the course: G is the Grade: GP is the Grade point.

Overall cumulative grade point average (CGPA) of a candidate after successful completion the required number of credits (80) is given by

CGPA = sum of GP / Total number of credits

14. Classification of Results

The final grade point to be awarded to the student is based on CGPA secured by the candidate and is given as follows,

CGPA	Numerical Index	Qualitative Index
4<= CGPA < 5	5	Second Class
5<= CGPA < 6	6	
6<= CGPA < 7	7	First Class
7<= CGPA < 8	8	
8<= CGPA < 9	9	Distinction
9<= CGPA <10	10	

Overall percentage = 10*CGPA or is said to be 50% in case CGPA <5

MASTER OF SOCIAL WORK
DISTRIBUTION OF COURSE CONTENT AND CREDITS
Honor's level

Papers offered

MSW-I Semester

Core papers for odd Semesters - Honor's level

Sl No.	Code No.	Paper title	L	T	P	Credits
1	SWHC-1	Social Work – History and Ideologies	2	1	0	3
2	SWHC-2	Society and Dynamics of Human Behavior	2	1	0	3
3	SWHC-3	Work with Individuals and Families	2	1	0	3
4	SWHC-4	Work with Groups	2	1	0	3
5	SWHC-5	Work with Communities	2	1	0	3
6	SWHC-6	Social Work Practicum – I	0	0	3	3
		Total Credits				**18**

MSW-II Semester
Core papers for even semesters - Honor's level

Sl No	Code No.	Paper title	L	T	P	Credits
1	SWHC-7	Management of Developmental and Welfare Services	2	1	0	3
2	SWHC-8	Social Work Research and Statistics	2	1	0	3
3	SWHC-9	Social Work Practicum – II (Social Work Camp and Summer Placement)	0	0	3	3
4	SWHC-10	Social Work Practicum - III	0	0	3	3
5	**SWSC-1**	Communication and Counseling / or Gandhian Approach to Welfare and Development	2	1	0	3
6	**SWSC-2**	Personal and Professional Growth / or Population and Environment	2	1	0	3
		Total				**18**

7	**SW0E -1**	Social Work Practice with Children / or Science of Crime, Penology and Social Work Practice	3	1	0	**4**

MSW-III Semester

(Odd semester) Masters level

Sl No.	Code No.	Paper title	L	T	P	Credits
1	SWHC - 11	Human Resource Management	2	1	0	3
2	SWHC –12	Social Work Practicum - IV	0	0	3	3
3	**SWSC - 3**	Social Work with Tribal and Rural Communities/ or Organisational Behavior and Organisational Development	2	1	0	3
4	**SWSC – 4**	Preventive and Social Medicine and Medical Social Work/ or Rehabilitation and Aftercare Services	2	1	0	**3**
5	**SWSC - 5**	Social Policy, Planning and Development / or Legal System in India	2	0	0	**2**
		Total Credits				**14**

6	**SWOE-2**	Gerentological Social Work /or Management of Non-Governmental Organizations	3	1	0	**4**

MSW-IV Semester
Master's level - even Semester

Sl No.	Code No.	Paper title	L	T	P	Credits
1	SWHC – 13	Employee Relations and Legislation	2	1	0	3
2	SWHC – 14	Mental Health and Psychiatric Social Work	2	1	0	3
3	SWHC – 15	Major Project	0	0	4	4
4	SWHC – 16	Social Work Practicum – V	0	0	3	3
5	SWHC – 17	Social Work Practicum – VI (Block Placement)	0	0	3	3
6	**SWSC - 6**	Human Resource Development and Employee Wellness /or Case studies	2 0	0 0	0 2	2 or 2
		Total Credits				**18**

7	**SWOE-3**	Disaster Management / or Correctional Administration and Services	3	1	0	**4**

MASTER OF SOCIAL WORK
DISTRIBUTION OF PAPER CODE AND CREDITS
Honor's level

Paper Codes and Credits

Core papers for odd semesters I semester MSW

Paper Code	Paper	L	T	P	Credits
SWHC-1	HC	2	1	0	3
SWHC-2	HC	2	1	0	3
SWHC-3	HC	2	1	0	3
SWHC-4	HC	2	1	0	3
SWHC-5	HC	2	1	0	3
SWHC-6	HC	0	0	3	3
Total					**18**

Core papers for even semesters II semester MSW

Paper Code	Paper	L	T	P	Credits
SWHC-7	HC	2	1	0	3
SWHC-8	HC	2	1	0	3
SWHC-9	HC	0	0	3	3
SWHC-10	HC	0	0	3	3
SWSC-1	SC	2	1	0	3
SWSC-2	SC	2	1	0	3
Total					**18**

SWOE-1	SWOE	3	1	0	4

Master's level

Core papers for odd semesters. III semester MSW

Paper Code	Paper	L	T	P	Credits
SWHC - 11	HC	2	1	0	3
SWHC – 12	HC	0	0	3	3
SWSC - 3	SC	2	1	0	3
SWSC – 4	SC	2	1	0	3
SWSC - 5	SC	2	0	0	2
Total					**14**

SWOE-2	SWOE	3	1	0	4

Master's level - even semester

Paper code	Paper	L	T	P	Credits
SWHC – 13	HC	2	1	0	3
SWHC – 14	HC	2	1	0	3
SWHC – 15	HC	0	0	4	4
SWHC – 16	HC	0	0	3	**3**
SWHC – 17	HC	0	0	3	**3**
SWSC - 6	SC	2 0	0 0	0 2	**2** **Or** **2**
Total					**18**

SWOE-3	SWOE	3	1	0	4

HC= Hard Core Paper, SC= Soft Core Paper, OE= Open Elective,
SWP= Social Work Practicum, BP=Block Placement,
SP=Summer Placement, CS= Case Studies, RP= Research Project.

SYLLABI

Honor's level odd semester (I Semester)

Odd semester

Paper Title: SOCIAL WORK - HISTORY AND IDEOLOGIES

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

This course aims at introducing the learners to a critical inquiry into the history and ideologies of social change and professional social work.

OBJECTIVES

a. Understand the history of evolution of social work profession, both in India and the West.
b. Develop insights into the origin and development of ideologies, approaches to social change.
c. Understand rationale, goals, ideals and ethics for social change.
d. Understand the perceptions of people and social problems, the status of benefactors and their motives.
e. Develop skills to understand contemporary reality in its historical context.
f. Understand self as a part of own environment and explore own assumptions, ideals, values to develop sensitivity to marginalization of vulnerable groups.

Course Content:

UNIT I

Introduction to Social Work: Social Work Definitions and meaning of Social Work; Basic assumptions of social work, Scope/Fields of Social Work; Social Work and other concepts: social service, social welfare, social development, social reform, social security - Interrelation between social work and other disciplines; - History of social work education in Western countries and India.

Professionalization of social work values, education, knowledge and professional associations - Goals, values, functions/roles and process of social work - Interface between professional and voluntary social work, social work ethics.

UNIT II

Indian History of Ideologies for Social Change -Ancient period: Vedic, Vedantic and non-Vedic Ideologies, Spirituality - Medieval period: Zoroastrianism and Islam in India - Mysticism of Bhakti and Sufi movements and Sikhism.
Modern period: Christianity in India - Hindu reform movements - Dalit movements - Gandhian ideology and Sarvodaya movement – Nationalism - Ideology of the Indian Constitution - Ideology of voluntary organisations and voluntary action. Relevance of Ideologies for contemporary Social Work practice.

UNIT III

Contemporary Ideologies for Social Change: Neoliberalism and Globalisation - Post modernism - Multiculturalism - Ideology of action groups and social movements -Ideology of non-governmental organisations. Role of state in providing social welfare services.

UNIT IV

Organized and scientific charity - Clinical social work - Ecological social work - Attributes of a profession.

Western History of Ideologies for Social Change: Western History of Social Work Profession - Medieval period: Judeo-Christian ideologies- Secular humanism and Protestantism - Modern period: Rationalism and Welfarism - Liberalism and democracy - Utilitarianism and Social Darwinism - Socialism and human rights.
Emerging ideologies of professional social work: Relevance of Ideologies for Contemporary Social Work practice.

Challenges for social workers in contemporary world.

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Economic and Political Weekly, The Indian Journal of Social Work, Lokayan Bulletin and Vikalp.

Odd Semester

Paper Title: SOCIETY AND DYNAMICS OF HUMAN BEHAVIOUR

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

This course provides the learners basic understanding of relevant concepts from social sciences, the social phenomena and development process. Besides, helping/enabling the learner develop skills for social analysis, it aims to introduce the learners to the development of individual across the life span, with a system and an ecological perspective. It also provides an understanding of human development and behavior in contextual influences, including individuals in disadvantaged or special contexts. The theoretical inputs are to enhance the understanding of people's growth, health, and development at various stages as bio-psycho-socio-spiritual being over the life span.

OBJECTIVES

a. Understand the concepts to examine social phenomena.
b. Develop skills to analyse Indian society and change.
c. Understand the concepts **change and conflict**.
d. Understand interactional nature of growth and behavior at various stages in the life span and impact of cultural aspects on the individual.
e. Apply the information of growth, development and health in social work practice in general and to individuals, groups and communities in particular.

Course Content

UNIT I

Society and Culture: Social Structure – meaning, status and roles; Culture: meaning and contents - traditions, customs, values, norms, folklore and mores.

Socialization: Meaning, process of socialization – The development of self – Agencies of socialization.

Indian Society: Composition of Indian Society: The concept of unity amidst diversity-

Social stratification in India: Meaning, caste, class divisions, Gender;

Types of social institutions: Marriage, Family, Religion, State and Law-Meaning and

Functions; Social Control exercised through the social institutions;
Social Change: Meaning, characteristics and factors inducing change with reference to India.

UNIT II

Social Groups, and Social Control – Primary and Secondary Groups, in-groups and out-groups. Social control through social groups and social institutions. Social Process.
Development – social ideals of Indian Constitution. Fundamental Rights.
Social Analysis: Significance of social analysis: A brief analysis of socioeconomic, political and cultural systems – Inter-linkages in the Indian context.
Theories of Economic Development, Globalization and its impact on Developing Countries: Stages of growth theory – Structural internationalist theory.
Privatization, liberalization and structural adjustment programmes – Role of international financial institutions.

UNIT III

Life Span: Beginning of life – Human reproductive system, Fertilization and Foetal development – Delivery, Pre-natal and post-natal care and their importance in development.
Development stages: Infancy, babyhood, childhood, puberty, adolescence, adulthood and aging:
Growth, characteristics, developmental goals, psycho-social adjustment and other adjustments, hazards, lifestyle effects – as relevant to each of these stages;
Principles of growth and development: methods of studying human behaviour, role of heredity and environment, social customs, traditions, values in parenting and child rearing practices; deprivation and development during stages of life span; Indian concept of life span stages.

UNIT IV

Basic human needs: Maslow's hierarchy of needs, physical, psychological and intellectual needs; Stress – Coping and social support.
Motivation, frustration and conflicts – Emotions and emotional behaviour.
Personality: Definition, nature, types and assessment of personality.

Intelligence: Concept, levels of intelligence, influence of heredity and environment,

assessment of intelligence.

Relevance of psychology to social work practice across the stages of development period specific needs, tasks and challenges.

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UNIT I AND II

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UNIT III AND IV

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Journals/ Magazines

Sociological Bulletin (Journal of the Indian Sociological Society).

Contribution to Indian Sociology.

Social Change, Issues and Perspectives (Journal of the Council for Social Development).

Economic and Political Weekly, EPW Research Foundations, Mumbai.

Odd Semester

Paper Title: WORK WITH INDIVIDUALS AND FAMILIES

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

This course aims to develop simple to complex skills of working with individuals and families in various situations like crisis, preventive, facilitative and developmental.

OBJECTIVES

a. Understand casework as a method of social work, and appreciate its place in social work practice.
b. Understand the values and principles of working with individuals and families.
c. Develop the ability to critically analyze problems of individuals and families and factors affecting them.
d. Enhance understanding of the basic concepts, tools and techniques in working with individuals and families, in problem-solving and in developmental work.
e. Develop appropriate skills and attitudes to work with individuals and families.

Course Content

UNIT I

Social case work: Definitions, scope, historical development - Influence of psychoanalysis on casework - Introduction of casework as a method of social work - Concepts of adjustment and maladjustment - Philosophical assumptions and casework values.

Principles of casework: Individualization, acceptance, non-judgmental attitude, participation, relationship, effective communication of feeling, client self-determination, and confidentiality.

Components of social casework: The person, the problem, the place and the process. Process in casework: Study, assessment, intervention, evaluation, follow-up, and termination.

UNIT II

Types of problems faced by Individuals and families; individual differences and needs - Family assessment in casework practice.

Theories and approaches: Psycho-social approach, Functional approach, Problem-solving approach, Crisis Theory, Family intervention, Behavioural modification, Transactional analysis, Client Centered Approach and Holistic approach.

UNIT III

Tools for Help: Case work tools: Interview, home visit, observation, listening, communication skills, rapport building.

Records: Nature, purpose and principles of recording.

Techniques of casework: Supportive, resource enhancement and counseling.

Self as a professional: Professional self - Conflicts and dilemmas in working with individuals and families.

UNIT IV

Application of Method: Primary and secondary settings - Application of methods in family, women, and child welfare settings, marriage counselling centres, schools settings, medical and psychiatric settings, correctional institutions and industry.

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Odd Semester

Paper Title: Work with Groups

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION:

This course aims at developing the understanding of Group Work as a method, developing skills for intervention, and gaining knowledge of the scope of this method in various settings.

OBJECTIVES :

a. To develop awareness about the specific characteristics of Group Work and its contributions as a method of social work intervention,
b. To gain knowledge about group formation and the use of a variety of group approaches.
c. To develop understanding of concepts, dynamics and small group theory in relation to all types of groups, e.g. family, staff, committee, long - term client groups.
d. To identify the various situations and settings where the method could be used in the context of social realities of the country.

UNIT I

Introduction and history of Group Work: Understanding of groups - Characteristics and significance of group - Definition of Social Group Work - Characteristics of Social Group Work - Purpose of Social Group Work; Historical evolution of group work with special emphasis on the Indian Context.

Type of Groups: Types and approaches based on objectives and purpose – Type of Membership – Time -Duration

Values and Principles in group work and Characteristics of Group formation: Values in social group work- Principles in group work - Assumptions underlying social group work - Factors of group formation - Formulation of goals - Identification of problems for work.

UNIT II

Group Processes and Group Dynamics: Importance of group processes - Typical patterns - Processes in different type of groups - Worker's skills in identifying and understanding processes.

Pre-group and Initial Phase: Planning model - Characteristics of pre group phase - Group structures Facilitation skills and role of worker in pre-group and initial phase.

Bond, sub-groups, role. Leadership - Isolation - Decision making - Conflict – Communication -Relationships.

UNIT III

- Middle Phase and Use of Program: Characteristics of middle phase - Group structures - Group dynamics - Facilitation skills - Role of group workers - - Comparison across phases - Concept and principles - Program planning - Skills in program planning- Models and Approaches of group work

Facilitation: Knowledge of skills and techniques for effective work with groups/problem solving.

UNIT IV

Recordings in Group work: Importance of recording in social group work - Principles of recording - Recording structure -Types of recording.

Evaluation in Groups and Termination Phase : Importance of evaluation - Types of evaluation - Methods of evaluation - Need for termination - Types of termination - Characteristics of termination phase - Worker's skills.

Application of Group Work: Application in health settings, school settings, family welfare settings, industrial settings, women and child welfare settings.

REFERENCE :

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Odd Semester

Paper Title: WORK WITH COMMUNITIES

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

Community organization / development, as a method of social work practice, is seen as a means to facilitate communities towards self-directed change. It takes as its basis the inequalities in society manifested through processes of marginalization, Discrimination or disempowerment of groups, which have resulted in the loss of control over resources, be they tangible or intangible. The strategies of Community Organization practice being addressed as part of the course cover a range spanning different ideologies, from those being people-initiated, and those that are initiated by the elite. Community organization is seen as a means

as well as an end, where Collective processes are to sustain the community's capacity to bring about change.

OBJECTIVES:

a. Understand the critical elements of community organization practice.
b. Enhance critical understanding of the models and strategies for community Organization practice.
c. Make the micro-macro connections between the ranges of complex issues in Practice.
d. Develop attitudes conducive to participatory activities for civil society.

Course Content

UNIT I

Community: Concept, characteristics, types and functions.

Community organization practice: Definition of community organization. Values and principles of Community Organizations. Ethics of community organization practice.

Understanding Human Rights in community organization practice.

Historical development of community organization practice.

Gender and Empowerment: Gender sensitive community organization practice

UNIT II

Models and Strategies of Community Organization - Locality Development Model - Social Planning Model - Social Action Model

Select methods of public interest: Mobilization, litigation, protests and demonstrations, Dealing with authorities

Public Relations, Planning, Monitoring and Evaluation - Roles in different models attributes and attitude.

UNIT III

Community Organization as a Method: Relevance of community organization as a Method across different spheres of social work intervention and relook at own attitudes.

Skills of Community Organization Practitioner: Participatory approaches - Problem analysis, resource mobilization, conflict resolution, organizing meetings, writing and documentation, networking, training.

Role of community organizer: Organizer, enabler, motivator, counselor…

Fund raising and its techniques.

UNIT IV

Human rights : Understanding human rights, need for the protection of human rights.

Strategy and Roles: Unionization as a strategy – Advocacy in community organization.

Current debates in Community Organization Practice: Emerging issues - Impact of Macro policies. NGO working with Community.

REFERENCES

1. Arora R. K. (Ed.) 1979 — People's Participation in Development Process: Essays in Honour of B. Mehta, Jaipur: the HCM State Institute of Public Administration.

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25. Zaltman, G. and Duncan, R. 1977 — Strategies for Planned Change, New York: Association Press.

Journals

Community Development journal : An International Forum, UK, Oxford University Press.

Development and change, Hague Blackwell Publisher.

Odd semester

Title: SOCIAL WORK PRACTICUM - I

Credit pattern: L:T:P::0:0:3 **Total Credits: 3**

Orientation provides information regarding.

i. The importance and place of the practicum in the educational programme.
ii. The purpose, functions and ethics in professional practice.

In the first four weeks, the learners may make a local directory to include emergency numbers of Hospitals/ PHCs/ Police/ Panchayath Office and Network Agencies along with references to other developmental and welfare services in the location.

Visits - provide an exposure to and understanding of the services provided in responses to people's needs. (Agencies in health setting, education, community, institutional services, criminal justice system, civic administration, rehabi1itation etc.)

Structured experience laboratory - is a classroom activity, which provides opportunities through the games/activities, to form the involvement of self in various practice skills. These laboratory experiences are designed in small groups to encourage participation, sharing of the experience and aid in examining learning and applications of skil1s. These sessions have a specific objective of experiencing self, and applying /using self in practice. (Relationship skills, Communication skills etc., will be focused)

Concurrent practice learning of two-days a week - on going learning of practice is an opportunity to develop intervention skills in reality situations. This entails learning social

work practice for two, or two and a half days or its equivalent, each week of the semester. The learners may be placed in agencies or in communities to initiate and participate in direct service delivery. Practice learning is a vital component of the educational opportunity to be provided to the learner. The teaching-learning process must be designed to help the learner to move on the mastering strategies, skills and techniques to practice social work.

Honor's level even semester (II Semester)

Even semester

Paper Title: MANAGEMENT OF DEVELOPMENTAL AND WELFARE SERVICES

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

The course aims to develop management competencies to function in organizations, participate as a team member and understand the role of a social work programmes manager.

OBJECTIVES

a. Understand the overall environment and its impact on the nature, structure and development of organizations in corporate, public and voluntary sectors in the context of social work profession.

b. Understand policies and procedures involved in establishing and maintaining human service organizations.

c. Acquire skills to network and participate in the management of resources – human, material and environmental.

d. Develop skills to participate in management of programmes, as a part of the inter-disciplinary team and initiate as well as develop new programmes.

e. Develop ability to analyze the practices applied in specific settings

Course Content

UNIT I

Social Services: Social service, Social security, social development and social welfare – concept- Need for welfare and developmental organisations, Factors determining social welfare programmes, Development and Welfare organizations‟ response to societal needs; role of state, voluntary and corporate sector.

Management services: Types of settings, organizational characteristics like origin, nature, size, structure, and design, organizational climate and impact of socio-political environment - Management process: Vision, Planning, Organizing, Directing, Staffing, Coordination, Reporting, Budgeting.

Establishment: Registration, different types of legislations, legal status, constitution, rules and procedure, goals - Financial resources: Organizational Budget, Sources of finance, Fund Raising, Records, Audit.

UNIT II

Physical: All activities related to acquiring, hiring and maintaining importable structure and infrastructure, maintenance of premises and daily upkeep.

Enhancing the involvement and the potential of people in organization's executive boards, committees; professionals and other staff-relationship, communication, team work, and facilitating team building, supervision, and participation in training.

UNIT III

Programme Development: Programme management: long term, short term, and Documentation.

Project proposals based on felt-needs, nature of resources, eligibility criteria, records, evaluation and research.

Impact analysis - Qualitative and quantitative.

UNIT IV

Public Relations: Public relations need and its promotion by all in the organisation. Representing the organization, networking, public, corporate and voluntary sector, resource building, accountability, transparency, use of media for publicity.

Change and its Management: Understand and manage change, innovation in a rapidly changing social environment: for policy programmes and structure.

Organizational understanding: Conflict, conflict resolution, creating positive climate.

REFERENCES

1. Choudhari, D. Paul. 1983 — Social Welfare Administration, Delhi: Atma Ram and Sons.

2. Garain, S. 1998 — Organizational Effectiveness of NGOs, Jaipur: University Book House.

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12. Lauffer, A. 1977 — Understanding Your Social Agency, London: Sage Publications.

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15. PRIA b Training of Trainers: A Manual for Participatory Training Methodology in Development, New Delhi: Society for Participatory Research in Asia.

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Even semester

Paper Title: SOCIAL WORK RESEARCH AND STATISTICS

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

This course is to equip learners to utilize, and conduct research as service managers to improve services, evaluate, and develop new services and intervention methods: strategies and techniques and also, be an effective consumer of other researches.

OBJECTIVES

a. To develop an understanding of scientific approach to human inquiry in comparison to the native or common sense approach in various aspects, and its process.
b. To understand major research strategies, meaning, scope and importance of social work research.
c. To develop an ability to see the linkages between practice, research, theory and their role in enriching one another.
d. To develop ability to conceptualize, formulate and conduct simple research projects/exercises (This would include a broad range of basic research skills such as conceptualization of a research strategy and problem; writing a research proposal; developing tools for col1ecting data; use of sampling, strategies; data collection, processing, presentation, analysis and interpretation; and writing research report etc).
e. To make informed assessment and judicious use of research studies and findings.
f. To develop skills for use of library and documentation services for research.

Course Content

UNIT I

Science - Meaning and assumptions, scientific approach in comparison to the native or common sense approach.

Scientific attitude; Scientific method; application of scientific method for the study of social phenomena.

Research: Definition and objectives, Social Work Research: Meaning, objectives, functions and limitations; Scope of social work research in India; Agencies sponsoring and conducting social work research, ethics in research.

Problem identification: Criteria for the selection of research problem; Problem formulation.

Concepts, constructs, variables, conceptual and operational definitions. Hypothesis: Meaning, importance, uses and requirements.

UNIT II

Design of research: Definition and importance; types of research design; exploratory, descriptive, experimental, evaluative design, participatory research and action research.

Source and Types of Data: Primary and secondary, objective and subjective, qualitative and

quantitative.

Sampling: Sample and population: Rationale and Characteristics of sampling; methods of sampling, general considerations in the determination of sample size.

Methods of collection of primary data:

Observation: Structured and unstructured; participant and non-participant. Questionnaire, interview schedule and interview guide. Pilot study and Pre-testing.

Scales: Need for scales, some prominent scaling procedures.

Case study: Meaning, uses, steps.

Secondary data: Official data, personal documents, problem in the use of secondary data

UNIT III

Processing of data: Content, editing, coding data classification, manual and mechanical tabulation of data; frequency distribution, diagrammatic and graphic presentation - use of computers.

Issues related to Social Work Research: Interpretation of data, research reporting: contents of research report: foot-note, references, bibliography, preparation of abstract; the art of making book review.

UNIT IV

Statistics: Definition, functions and importance Measures of

Central Tendency; Measures of Dispersion.

Chi-square, Correlation Coefficient, 't' distribution; Analysis of Variance and „ 'F' distribution.

SPSS package.

REFERENCES

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Even semester

Title: SOCIAL WORK PRACTICUM - II:

Credit pattern: L:T:P::0:0:3 **Total Credits: 3**

SOCIAL WORK CAMP:

Rural/ Tribal camps with a duration of 10 days - provide opportunities to experience rural life, analyze rural dynamics, and observe the functioning of local self government and voluntary organisations. This experience aids peer participation in planning for activities for own group and those for local people. It also helps develop skills to carry out, evaluate, and report the experience.

SUMMER PLACEMENT:

Summer Placement - provides an opportunity to experience day-to-day work in a setting. The learner gets involved with direct practice with the client system and with the ongoing management operations of the setting. The time frame recommended for this experience is about three weeks, after the first year of the post-graduate programme. The learner may use the same setting for data collection of Term project.

The student has to execute a term project during the summer placement and is expected to select a theme relevant to current social issues in consultation with the supervisor and make

an exhaustive survey of literature on the chosen theme including empirical studies made on the same.

Further, the student shall also collect the experiences or opinions of people on the issues and make a detailed presentation.

Flexibility is accorded in planning and executing the term project. Creative and analytical approaches are to be carried out.

Even semester

Title : SOCIAL WORK PRACTICUM - III

Credit pattern: L:T:P::0:0:3 **Total Credits: 3**

Concurrent practice learning of two-days a week - on going learning of practice is an opportunity to develop intervention skills in reality situations. This entails learning social work practice for two, or two and a half days or its equivalent, each week of the semester. The learners may be placed in agencies or in communities to initiate and participate in direct service delivery. Practice learning is a vital component of the educational opportunity to be provided to the learner. The teaching-learning process must be designed to help the learner to move on the mastering strategies, skills and techniques to practice social work.

Even semester

Paper title: COMMUNICATION AND COUNSELING

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

This paper relates the relevance of components of communication and counseling in social work practice.

OBJECTIVES

a. Understand the meaning and importance of communication in day-to-day life.
b. Focus on interpersonal communication of interviewing and allied aspects.
c. Develop holistic understanding of counseling as a tool for help.
d. Acquire knowledge of various approaches: their theoretical under-pinnings for goals, values, processes and techniques,
e. Develop skills of application to real life situations.

UNIT I

Communication: Meaning and importance of communication.

Process of communication: Key elements in the communication process - Communication, message, audience; channel of communication. Verbal and non-verbal communication.

Basics of Communication.
Education and communication for national development.

Interpersonal communication: Interviewing - Objectives, principles of interviewing; listening, qualities of effective communicator.

Seminars, conferences, lectures, group discussion, panel discussion, symposium, workshop, role playing, simulation exercises, written communication, report writing, letter writing, article/essay writing, games, brain storming, street play, field work exposure.

UNIT II

Visual aids in communication: Poster making, use of notice boards, flip charts, charts, flash cards, photographs, pamphlets, slide shows.

Mass Communication: Television, exhibition, newspapers and magazines, advertisements, radio, film, VCD/ DVD, e-mail, internet.

Impact of mass communication on society, family, marriage and child development. Communication Analysis and Planning: Planning and executing a communication campaign on an issue using various methods of communication.

UNIT III

Counseling: Definition, nature and goals, areas of counseling; Historical background and origins of counseling, ethical nature of counseling, qualities of an effective counselor.

Counseling Situations: Developmental, preventive, facilitative, and crisis.

Counseling and Psychotherapy - Skills in counseling - Establishing the relationship.

Process of Counseling.

Approaches to Counseling: Approaches; Theoretical base, thrust, goals, key concepts, techniques - Approaches like person-centered, rational-emotive, behavioral approaches, gestalt, existential approaches, Egan's three stage model, eclectic model.

Indigenous Approach: Indigenous approaches of help and self-help like yoga, reflection. Act of Prayashchit.

UNIT IV

Couple and Family Counseling: Issues in such counseling, its process and stages.

Crisis Counseling, Group Counseling: Counseling for groups - Process, advantages and disadvantages of group counseling.

Practice of counseling in family counseling centers, family courts, counseling bureau. Premarital and marital counseling, vocational counseling centers, mental health centres, child guidance clinics, correctional institutions, deaddiction and rehabilitation centres, educational institutions.

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The True Essence of Helping, New York, Bantam Books.

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Even semester

Paper Title : GANDHIAN APPROACH TO WELFARE AND DEVELOPMENT

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

The course aims at sensitizing the learner to the Gandhian approach and to utilize some of the skills in practice.

OBJECTIVES

a. Develop an understanding of Gandhi‟s concept of society and his approach to social transformation.
b. Develop knowledge of the specific programmes formulated by Gandhi for rural reconstruction and the development of the weaker sections of society, with the focus on strategies and skills.
c. Develop the ability to identify similarities and differences between the Gandhian and professional social work approaches to social change, welfare and development.

Course Content

Unit I

Gandhian thought: Salient features of Gandhian thought; Gandhian values; Concepts and methods; Concept of a healthy society; Sarvodaya.

Unit II

Gandhian Approach: Economic and its organization: Ownership of property; Concept of trusteeship, distribution and economic equality; System of production, problems of mechanization, decentralization of production, rural- urban relationship

Unit III

Social Organisation: Marriage and family, position of women, social stratification, caste and untouchability, education and its role; Basic education.

Unit IV

Constructive programmes: Contents training of constructive workers, skills involved, nature of programmes; Boodan, Gramdan.

Gandhian and Vinbobha's movements with special reference to Bhoodan and Gramdan

Gandhian and Professional Social Work Approach: Similarities and differences between Gandhian and professional approach to social development and welfare

REFERENCES

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Even semester

Paper title: PERSONAL AND PROFESSIONAL GROWTH.

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

The course aims at enhancing personal and professional effectiveness by developing a continuous awareness and deeper insight into one's being. It encourages value clarification, upholding of professional ethics, and ability to make effective choices for integration. It provides opportunities to understand stress, stressors and methods to handle stress experienced.

OBJECTIVES

a. Understand self as a being, as one in the process of becoming and experience self-awareness.
b. Examine own values and attitudes and explore choices made to express self in own environment.
c. Develop positive life skills and practice self-help methods for integration and for stress reduction.
d. Understand and uphold professional values and ethics.

Course Content:

UNIT I

Self and Self Awareness: Understand self through a cognitive construct/paradigm (two/three models from among those available may be offered as workshops). Suggested approaches are: Rational Emotive Therapy, Gestalt Approach, Transactional Analysis, Reality Therapy,

Yoga for Therapy, Meditation Techniques.

Explore self as being, and understand the process of becoming. (through observation)
Practice consciously measures to sustain and experience continuous awareness. Observation and Reflection: Theory and techniques.
Communication Choices: Communication mode and patterns and effectiveness, Interpersonal communication, nature of choices made.

UNIT II

Emotions and their Expression: Emotions, nature of expression.
Understand own pattern of communication, choices made to express emotions, modes used, examine need for change.
Communication: Informal and knowledge and skills of rapid reading, writing, creative writing, report writing and public speaking.

UNIT III

Creativity and Self: Understand brain functions: Creativity, need and development
Life Style: Conscious life style - enhanced life skills: Communication, decision making, empathy, critical thinking, use of time and money, building and sustaining bonds-relational, colleagial and personal.
Self defeating behaviour - nature and impact. Choices for change.

UNIT IV

Values, Attitude and Professional Ethics: Values and attitudes - their role in life, Value conflict - its impact, value clarification.
Integration: Through Eastern and Western approaches experience the processes of integration. Approaches recommended are: Yoga as a science, meditation (tool for meditation - own choice).
Stress / Burn out - Self help Methods: Stress, Stressors, nature and impact of stress, its expression, and burnout.
Spirituality and Growth.

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Even semester

Paper Title : POPULATION AND ENVIRONMENT

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

The content has two aspects to it. Population dynamics and its relatedness to the environment, natural resources, utilization and their preservation.

OBJECTIVES:

a. Understand characteristics, determinants of population growth.
b. Examine population policy, plan and initiatives.
c. Understand inter-relatedness of human life, living organisms and environment.
d. Examine utilization and management of resources.
e. Develop skills to participate in activities related to the two areas.

Course Content

UNIT I

Characteristics of population: Population, determinants of growth. global concerns - Characteristics of Indian Population – Distribution by age, sex, literacy and occupation – Fertility trends - Birth and death ratio.

Population Policy, World Action Plan, Population Policy of India- Implementation; Initiatives – Government and NGO.

UNIT II

Family Planning: Objectives, scope, methods, implementation, mechanisms and progress.

Concept and Scope of Population education, family life education, sex education, and family planning education.

Population and Environment: Interrelatedness of human life, living organisms; Environment and natural resource – Environment, lifestyle, degradation. Environment management, maintaining, improving, enhancing – Current issues of Environment.

UNIT III

Natural Resources and Diversity: Utilisation and management – Forest, land, water, air, energy sources - Pollution - Sources, treatment, prevention - Soil, water, air, noise - Waste matter - disposal, recycling, renewal, problems, issues - Programmes for forest, land and water management.

UNIT IV

Environment Protection Laws and Role of Social Worker: Acts related to environmental protection – Forest conservation- Water pollution – Standards and tolerance levels – Unplanned urbanization- Environmental movements in India - Role of NGOs in Environmental issues – Government agencies in environmental protection – Social work initiatives at different levels.

REFERENCES

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Open Elective

Paper Title: SOCIAL WORK PRACTICE WITH CHILDREN

Credit pattern: L:T:P::3:1:0 **Total Credits: 4**

INTRODUCTION

Children are the future of human society. Profession of social work has to work with children in difficult circumstances while rendering services in varied settings. There is a need for social workers specially trained in working with the children and adolescents. Such trained social workers can render valuable services to children in need of professional help.

The current paper focuses on children as a special group for focused social work intervention through facilitating acquisition of knowledge about children from different perspectives, types of settings where the children can be helped and application of social work methods to render social work intervention to children.

OBJECTIVES

a. To understand children facing difficult circumstances and the impact of difficult circumstances on children's development.
b. To gain an overview of agencies where children form the major client group, and appropriate evaluation of children's problems.
c. To impart to the trainee, specific Social Work intervention methods in dealing with children as a client group; to understand the Rights of children in the legal, national and international context.

Course Content

UNIT I

Human reproductive system - beginning of life till beginning of adulthood. Understanding the children and adolescents from different perspectives - developmental, demographic, economic, psychological, sociological, environmental, familial, educational dimensions of child development. Issues in adolescence - self image, peer group, career choice, sexuality, education, vocation and other issues Healthy child development, importance of supportive environment in upbringing of the children.

UNIT II

Children in difficult circumstances - developmental delay, physical and intellectual handicaps; chronic illnesses, nutritional deficiencies, accidents, poverty, child labour, abandoned and orphaned children, adoption issues, children in institutions, psychological problems in children, self harm and suicides in children, addiction related problems in children, children brought up by single parent due to death, divorce and other related issues, problems in formal schooling, children living in difficult situations - children in streets, slums, war zones, migration, children in conflict with law, truancy, drug abuse, running away from homes, neglected children, child abuse, child trafficking, child marriage and any other. Special focus on adolescent issues as applicable.

UNIT III

Children in difficulties – Helping agencies, Settings and issues - paediatric hospitals, nursing homes, child care centres, child guidance clinics, residential care services for children - residential schools, orphanages, homes for children in conflict with law, agencies dealing with differently abled children, any other.

Assessment, intervention, follow up and evaluation of children and adolescents facing difficulties.

UNIT IV

Social Work Intervention Programmes - Case work, group work, community organisation methods in helping children, school mental health programmes, home visits, school visits, life skills training, family life education for adolescents, creative use of play therapy, art, dance, drama and other mediums for helping children, child help lines, child care centres, adoption services, special rehabilitation services for rescued children and any other.

Legislations pertaining to children, legal protection, International, National and non-governmental organisations working with children, Rights of the children.

REFERENCES

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Open Elective

Paper Title: **SCIENCE OF CRIME, PENOLOGY AND SOCIAL WORK PRACTICE**

Credit pattern: L:T:P::3:1:0 **Total Credits: 4**

INTRODUCTION

The course aims at introducing to the students the concepts of crime, punishment and the impact of crime on victims. The focus is on facilitating understanding of the learner to deliberate social work interventions with the prevention of crime, handling the issues related to those clients who are in conflict with law as well as helping the victims to recover from the impact of crime.

OBJECTIVES

a. To understand the concept of criminology and crime, as applicable to the Indian context with the impact of individual in conflict with law

b. To learn the dimensions of penology, Indian prison system, the impact of imprisonment on the individuals and prison administration

c. To understand the impact of crime on victims, compensation and hurdles in getting justice in the Indian context

c. To assimilate the practice of social work interventions in crime prevention, promotion of social health, dealing with persons in conflict with law, Human Rights issues in the context of under - trials, imprisonment, rehabilitation of released prisoners and victims.

Course Content

UNIT I

Crime: Meaning and definition, historical perspective; Nature and Scope of Criminology, Causation of Crime, Characteristics and Classification of Crimes, Crime patterns - Habitual, Professional, Organised, White collar, Public order crimes; Gender related issues in crimes; Classification of offenders under Indian Penal Code. Trial duration and pending cases, its impact.

UNIT II

Penology: Meaning, definition, historical perspective, scope.

Theories of Punishment: Deterrent theory, retributive theory, preventive theory and reformative theory.

Efficacy of punishment.

Essentials of an ideal penal system, penal policy in India.

Forms of Punishment: Corporal and capital punishment - pros and cons. Agencies involved in criminal justice system: Correctional institutions. Impact of imprisonment, maintenance of prisons, staff dynamics.

UNIT III

Victimology: Meaning, definition, historical perspective, scope of the study. Problems of victims - physical, psychological, socio-cultural.

Victim offender relationship.

Hurdles in crime reporting, investigation and justice delivery in the Indian context.

Compensation and restitution measures.

UNIT IV

Social Work Practice in Correctional Setting: Scope for social work practice in institutional and non institutional settings.

Application of Social Work interventions with under - trials, prisoners, rehabilitation of prisoners, work with families of prisoners, work with victims of crime.

Human Rights in the context of crime and punishment - Agencies to protect Human Rights - National Human Rights Commission, State Human Rights Commissions, Right to information Act and in the context of Human Rights violation,

Social Work measures with the Police, the Judiciary and the prison staff - Job stress, burn out and other issues.

REFERENCES:

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Masters level- odd semester (III Semester)

Odd Semester

Paper Title: HUMAN RESOURCE MANAGEMENT

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

The main objective of this course is to prepare young graduates for management and administrative positions in various industrial, business, governmental/non-governmental organisations and service sector organisations.

OBJECTIVES

a. Develop managerial skills in different functional areas of management with practical focus on HRM.
b. Develop the competence to evolve the problem-solving approaches by applying conceptual and behavioural skills.
c. Develop interpersonal skills/ competence and leadership qualities to work in a group with team building approach.
d. Develop sound theoretical base in various concepts and theories to enable the student to develop a broad perspective of the management field.
e. Distinguish the strategic approach to Human Resources from the traditional functional approach.
f. Understand the relationship of HR strategy with overall corporate strategy.

Course Content

UNIT I

Human Resource Management: Concept, scope, philosophy and objectives; Evolution; Approaches, Structure and Functions; Line and staff relations of HRM; HRM Model. Hierarchy, formal and informal structure, Organogram, reporting structure.

Human Resource Planning: Concept and objectives; Human resource inventory; Human resource

planning process; job analysis; job description; job specification; job design; career planning and career paths; job rotation.

UNIT II

Talent Acquisition: Goals; polices, sources and methods. Selection: Concept, process. Talent Acquisition Tests, Theories and issues in psychological testing, Intelligence testing – theoretical background, Aptitude Testing, Personality Assessment, MBTI. Placement, Induction and socializing the new employee. Talent retention: Concept, importance and methods.

UNIT III

Compensation Management: Factors influencing compensation plans and policies; Job evaluation - Fixation of salary, components of salary. Pay for performance – Incentive Schemes, principles and types, Employee Stock Option Plan, compensation survey / review

UNIT IV

Strategic Human Resource Management (SHRM): Business strategy and organizational capability, SHRM: aligning HR with Corporate strategy, Strategic HR planning and Development, Change Management and restructuring and SHRM, Corporate Social Responsibility (CSR), Corporate Ethics, Values and SHRM, Competencies of HR professional in a SHRM scenario.

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Odd semester

Title: SOCIAL WORK PRACTICUM - IV

Credit pattern: L:T:P::0:0:3 **Total Credits: 3**

Workshops: Skills Development - help learners acquire specific skills for situations encountered during practice and acquire skills for intervention. These may be for problems/ concerns, issues or situations like work with alcoholics, HIV/AIDS affected persons, adolescents for life ski11s development, youth for leadership development and couples for marital relationship and enrichment work with elderly. These workshops are to enhance skills/ develop new skills for practice in specific situation, specific problems and issues.

Concurrent practice learning of two-days a week -on going learning of practice is an opportunity to develop intervention skills in reality situations. This entails learning social work practice for two, or two and a half days or its equivalent, each week of the semester.

The learners may be placed in agencies or in communities to initiate and participate in direct service delivery. Practice learning is a vital component of the educational opportunity to be provided to the learner. The teaching-learning process must be designed to help the learner to move on the mastering strategies, skills and techniques to practice social work.

Odd semester

Paper Title : SOCIAL WORK WITH TRIBAL AND RURAL COMMUNITIES.

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

This course aims at introducing the learner the programmes of tribal and rural development, and the importance of social work practice with tribal and rural communities.

OBJECTIVES

a. Develop an understanding of tribal and rural communities.
b. Understand the characteristics and problems of tribal and rural communities.
c. Acquire knowledge about the contribution of Governmental and Non-governmental Organisations to tribal and rural development.
d. Develop an understanding of the functions of Panchayath Raj Institutions with particular reference to Karnataka.
e. Gain knowledge about the application of social work in tribal and rural development programmes.

Course Content

UNIT I

Tribe in relation to caste and nation - Nature and Characteristics of Primitive Cultures.
Tribes in India and their ecological distribution.
Emerging Trends in Tribal Social Institutions - Family and Kinship Systems, Jati Structure, Economic Structure, Political organizations.
Characteristics of Tribal Society - Economic, Social, Political and Cultural.
Problems of Tribal Life.

UNIT II

Government Programmes since Independence and their Impact on Tribal Societies
Programmes of Voluntary Agencies and their Impact on Tribal Societies.
Analysis and Assessment of Tribal Community Problems - Special Problems of the Tribals in a particular area.
Social Work Practice in Tribal Development: Community organization as a method of intervention, Participatory Rural Appraisal (PRA), Logical Framework approach/Analysis (LFA), Intervention strategies in community settings: awareness buildings, organizing, activating, people's participation, negotiating,• lobbying and, resolving group conflicts.

UNIT III

Rural Society and Poverty - Historical perspective - Dynamics in the village Society: Caste/class relationships - Control and Power, Conflict and Integration.

Poverty in the rural context - Its nature and manifestations.

Analysis of Basic Problems - Issues faced by the rural poor such as Indebtedness, Bonded labor, Low wages, Unemployment, Underemployment, and other forms of exploitations.

UNIT IV

Current Rural Development Programmes in India:

Council for the Advancement of People's Action and Rural Technology (CAPART) and other Rural Development.

Poverty alleviation programmes.

Panchayath Raj System in Karnataka and its role in rural and tribal development.

Role of social worker in tribal and rural development programme.

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Odd Semester

Paper Title: ORGANIZATIONAL BEHAVIOUR AND ORGANIZATIONAL DEVELOPMENT

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

The course aims to provide an understanding of human behavior at work so that the learner may acquire the skills required to analyze problems and develop a problem-solving approach.

OBJECTIVES:

a. To impart knowledge about individual, group and organizational dynamics and their consequences,
b. To make clear the concepts and approaches that help in developing models or systems that support human ingenuity.
c. To acquaint the students with the knowledge of theories and practices that govern human behavior at work,

d. To help the learner understand the value and worth of human resources in an organization.
e. To enable the students to become aware of their communication skills and sensitize them to their potential to become successful managers.
f. To gain self-confidence and healthy self-respect while retaining respect for other's rights.
g. To understand the application of Transactional Analysis in several areas of employee management.

Course content

UNIT I

Conceptual Framework: Organization Behavior: Definition, concept, approaches and scope, historical background of Organization Behavior.
Introduction to Enneagram, personality types according to Enneagram. Emotional Intelligence; Attitude, Values, Personality; Job satisfaction, Employee Morale : Meaning, influences and outcomes - Measuring job satisfaction.
Assertiveness Training: Benefits of assertiveness – components of assertive behavior, measuring assertiveness, handling fear, handling anger, handling
depression, developing assertive behavior skills, assertiveness on the job, assertiveness in interpersonal relations.

UNIT II

Transactional Analysis (TA), TA and self awareness, Winners and Losers, Structural analysis, Life positions, transactions, games and strokes, Life scripts, TA applications in motivation, Leadership and Teamwork, TA in counseling.

Motivation: Concept and theories, techniques of motivation, role of reinforcement and punishment, motivation and organization reward system, awards, employee empowerment and engagement.

UNIT III

Leadership: Meaning, roles, skills, and styles, leadership theories, types of leadership, powerful persuasion strategies.

Group dynamics: Concept, types of groups, dynamics of group formation, decision making in groups.

Organization Development: Concept, emerging approaches and techniques, Foundations of OD, Organizational Diagnosis, OD interventions – An overview, individual and interpersonal interventions, team/group interventions, comprehensive interventions, organizational transformation, success and failure of OD, Planned Organizational change, feedback and OD.

UNIT IV

Organizational Conflict: Concepts, causes and types, conflict-resolution strategies.

Organizational change: Concept, forces of change and resistance to change, managing organizational change and diversity, facilitating creative and divergent thinking, planned organizational change.

Stress and Burn Out: Concepts, causes, consequences and coping strategies. Managerial Ethics: Individual ethics, ethical dilemmas in management, Ethical practices of Indian Managers, Corporate ethics.

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Odd semester

Paper code: SWSC-4

Paper Title: PREVENTIVE AND SOCIAL MEDICINE AND MEDICAL SOCIAL WORK

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

This course introduces the basic health issues and the application of social work in health setting both in hospital and community.

OBJECTIVES

a. Understand the concept and dimensions of health.
b. Understand the issues related to the prevention, clinical features and treatment of major communicable and non-communicable diseases.
c. Trace the historical development of medical social work in India and abroad.
d. Understand the nature of medical social work services.
e. Understand the tenets of National Health Policy of India and modernization of community based health care services. .
f. Understand the health care services at different levels.

COURSE CONTENT

UNIT I

Concept of health : Physical, social, mental and spiritual dimensions of health - Positive health - Determinants of health - Health and development - Indicators of health. Concept of Prevention: Levels of prevention - Hygiene, public health, preventive medicine, community health, social medicine, community medicine.

Health Care of the Community; Concept of health care - Levels and principles of health care.

UNIT II

Communicable and Non-communicable Diseases: Leprosy, Tuberculosis, Sexually Transmitted Diseases (STDs), HIV/AIDS. Cancer, Hypertension, Accidents, Diabetes, Blindness, Neurological problems, Mental illnesses.

Maternal and Child Health Services - Immunization – Integrated Child Development Services (ICDS) Scheme - School health programmes.

UNIT III

Medical Social Work: Meaning, Definition and Scope - Historical background and nature: Medical Social Work in India and Abroad - Team work and Multidisciplinary approach in health care; Organization and administration of medical social work departments in hospitals.

Patient as a person and Role of Social Worker: Understanding the patient as a person; Illness behaviour and treatment behaviour of the patient - Impact of illness on the patient and family.

Role of social worker with patients and their families - Rehabilitation.

UNIT IV

National Health Policy of India, Directorate General of Health Services, Indian Council of Medical Research (ICMR), Health as a concurrent subject.

Health System in India - at the Centre, at the State level, at the district level, and village level.

Health Education and Communication.

Voluntary Health Agencies in India - International health - World Health Organisation (WHO), UNICEF, UNDP, FAO, ILO, World Bank.

Non - governmental and other Agencies - Ford Foundation, CARE, International Red Cross, Indian Red Cross and others.

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Odd Semester

Paper Title: REHABILITATION AND AFTER CARE SERVICES

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

Rehabilitation of differently abled people is a noble and worthy endeavor, requiring the combined knowledge of the psycho-social theory and practical skills and techniques of social work. The current paper facilitates social work students to work with the specific group of clientele suffering from various types of disabilities and impart application of specific professional social work methods to cater to the needs of this population.

OBJECTIVES:

a. To understand the concept of handicap, rehabilitation and the scope for practice.
b. To identify the specific client categories requiring the rehabilitation services, problem specificity and rehabilitation service interventions.
c. To acquaint oneself with different rehabilitation settings, different therapeutic approaches to rehabilitation process.

d. To acquire the social work skills adapted to facilitate the process of rehabilitation, the rights and legal provisions provided for differently abled people and assimilate the knowledge of social work practice to disability specific client service.

Course Content

UNIT I

Rehabilitation: Definition and scope for social work interventions; definition of Impairment, Disability, Handicap; causes of Handicap - heredity, acquired, Major illnesses - physical, neurological and psychiatric; Stress, vulnerability, coping and competence to deal with handicaps; Need for comprehensive rehabilitation – psycho-social rehabilitation

UNIT II

History, philosophy and principles of psycho-social rehabilitation; specific problem areas – physical handicap - vision, hearing, orthopedic, speech and language difficulties, mental retardation and others; neurological, psychiatric problems, disasters, alcohol and drug usage, terminal illnesses and any other.

Intervention in rehabilitation: Assessment, planning, intervention, evaluation, tools for assessment, follow-up services.

UNTI III

Rehabilitation Settings: Hospital based, day-care, night-care, quarter-way home, half- way-home, group home, hostels, long-stay homes, vocational guidance centre, sheltered workshop, occupational therapy centre, community based rehabilitation centre, home care, inclusive education and others

Approaches: Therapeutic community, behavior modifications, transactional analysis and eclectic approach

UNIT IV

Practice of Social work methods in the process of rehabilitation: Case work, group work, community organisation, research, administration and social action.

Legal provisions for differently abled people – The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995, Rehabilitation Council of India: Formation, scope and functions, governmental policies and programmes, initiatives from the non- governmental sectors.

International trends and national initiatives in the rehabilitation scenario.

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Odd semester

Paper Title: SOCIAL POLICY, PLANNING AND DEVELOPMENT

Credit pattern: L:T:P::2:0:0 **Total Credits: 2**

INTRODUCTION

The course introduces the learner as to how policy is a link between Constitutional Principles, Development Plans, Legislative and Executive Actions. The analysis of these processes is to enable utilization of the knowledge to improve social work practice.

Further, it provides a critical and analytical framework to understand key concepts, development processes and current issues, pertaining to different parts of the world, with specific reference to India. This course is expected to provide the social work students with a context for micro-level interventions.

OBJECTIVES

a. Gain knowledge of policy analysis and the policy formulation process.
1. Acquire skills in critical analysis of social policies and development plans.
2. Develop an understanding of social policy in the perspective of national goals as stated in the Constitution, particularly with reference to Fundamental Rights and the Directive Principles of State Policy.
d. Critically understand the concept, content and process of social development.
e. Develop the capacity to identify linkages among social needs, problems, development issues and policies.
f. Locate strategies and skills necessary for social development and reinforce values of social justice, gender justice and equality.

Course Content

UNIT I

Social Policy and Constitution: Concept of social policy, sectoral policies and social services - Relationship between social policy and social development-- Values underlying social policy and planning based on the Constitutional provisions (i.e. the Directive Principles of State Policy and Fundamental Rights) and the Human Rights - Different models of social policy and their applicability to the Indian situation.

UNIT II

Sectoral Social Policies in India: Evolution of social policy in India in a historical perspective- Different sectoral policies and their implementation, e.g. Policies concerning education, health, social welfare, women, children, welfare of backward classes, social security, housing, youth, population and family welfare, environment and ecology, urban and rural development, tribal development and poverty alleviation.

UNIT III

Social Planning: Concept of social planning - Scope of social planning - the popular restricted view as planning for social services and the wider view as inclusive of all sectoral planning to achieve the goals of social development - Indian planning in a historical perspective - The Constitutional position of planning in India. The legal status of the NITI AYOG - Coordination between Centre and State, need for decentralization - Panchayath Raj - people participation.

UNIT IV

Social Development: Concept of social development - Current debates of development - Approaches to development - Development indicators.

Social Development in India: The historical and social context of development in India - Demographic transitions - Rural development: Agrarian and land reforms; Green Revolution -

Industrialization and urban development - Labour relations-Gender issues - Environmental issues (land, water, forest) - Education - Health.

REFERENCES

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Recommended Journals / Periodicals

Alternatives; Development and Change; Economic and Political Weekly.

Odd Semester

Paper Title: LEGAL SYSTEM IN INDIA

Credit pattern: L:T:P::2:0:0 **Total Credits: 2**

INTRODUCTION

The course is to help learners understand the legal system and procedures in India. It supports understanding the processes in public interest litigation and develops skills for the same.

OBJECTIVES

a. Acquire information on the legal rights of people.

b. Develop an understanding of the legal system and get acquainted with the process of the legal system with emphasis on functioning in India.

c. Understand the role of the police, prosecution, judiciary and correction.

d. Gain insight into the problems faced by the people belonging to different strata of society, in interacting with this system.

3. Develop an understanding of the processes and problems of public interest litigation and legal aid to marginalized.

Course Content

UNIT I

Social Justice: Meaning and Concept; Social legislation: Meaning, definitions and concept. Social justice as an essential basis of social legislations; Social legislations in a welfare state with special reference to India.

Rights: Concept and definitions of Rights; types of Rights; Rights of women and children; Rights of Scheduled Castes and Scheduled Tribes; Rights of accused and offender under Constitution of India, Indian Penal Code and Criminal Procedure Code.

Meaning and concept of Law: functions, purpose and classification

UNIT II

Division of Law: Substantive Law and Procedural Law.

Legislations pertaining to Social Institutions: Marriage, divorce, maintenance of spouse, adoption.

Legislations for prevention of Crime and Deviance: Indian Penal Code (relevant chapters like of Offences against Public Tranquility, of Offences affecting the Public Health, Safety, Convenience, of Decency and Morals, of Offences relating to Religion, of Offences affecting the Human Body, of Offences relating to Marriage, of Cruelty by Husband or Relatives of Husband)

Legislations pertaining to women.

UNIT III

Criminal Justice System in India:

Police: Structure, powers and functions and their role in maintaining peace and order in the society.

Prosecution: Meaning, structure, its role in criminal justice, trial participation.

Judiciary: Supreme Court, High Court - Constitution of Supreme Court and High Court: Powers and functions.

Sub-ordinate Courts - District Sessions Court, Magistrate Courts, and other subordinate courts.

UNIT IV

Correction and Correctional Laws: Corrective measures as per Criminal Procedure Code, Probation of Offenders Act, Juvenile Justice (Care and Protection of Children) Act.

Legal Aid: Concept of legal-aid, history of legal-aid, persons needing legal-aid, legal-aid schemes.

Public Interest Litigation: Meaning, Concept, Process and Problems.

Right to Information Act- Provisions and implementation.

Role of Social Worker: Social Work intervention, need, methods.

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13. Mathew, P. D. — II P.A Legal Aid Series, Delhi: Indian Social Institute

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19. Singh. L. M. (Ed.) 1973 — Law and Poverty: Cases and Materials, Bombay: Tripathi.

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Open Elective

Paper Title: GERONTOLOGICAL SOCIAL WORK

Credit pattern: L:T:P::3:1:0 **Total Credits: 4**

INTRODUCTION

Changing demographic profile in India has led to rise in the number of elderly as never before. Along with the enhanced longevity, a number of issues related to care and management of elderly have come into focus. Social work as a profession concerned with providing professional service to the needy, has recognized the need to address the concerns of the senior citizens. The paper envisages training the learners in professional social work practice with the elderly.

The paper focuses on senior citizens as target client group for social work intervention; the paper deals with the issues, concerns, problems and social work methods in facilitating healthy adaptation of the client group in the current Indian context.

OBJECTIVES:

a. To get an overview of the perspectives on aging and scope for practice.
b. To understand the various challenges related to aging, healthy aging and problems of the elderly in difficult situations.
c. To identify agencies working with elderly, the different care settings and issues in working with elderly in different settings. To gain an insight into process of working with elderly.
d. To train the learners in applying specific social work intervention measures in working with senior citizens, care givers and to have an understanding of
e. National Policy on Older Persons, and the role of International and NGOs in improving the quality of life of the elderly.

Course Content

UNIT I

Gerontology – Definition and scope. Understanding the elderly – demographic, developmental, psychological, socio cultural, economic, and health perspectives. The issues pertaining to elderly- health, occupation, income, retirement planning, family support, gender issues, property Rights and any other

UNIT II

Developmental tasks in elderly: Issues in health care, changes in family structure, coping with aging process, challenges due to changing physiological, economic, safety, status in the family and other issues, Healthy aging, quality of life, coping with demise of the life partner, bereavement, resolving one's own death, and any other.

UNIT III

Care settings for elderly: General hospitals, geriatric wards/ hospitals, home-based care, homes

for the aged, nursing homes, day-care-centers, hobby centers, and facilities for homeless elderly, elder helpline, and senior citizen forum.

Tools for assessment of the problems of elderly, intervention and follow up services and evaluation.

UNIT IV

Social work intervention measures for senior citizens through methods of social work: Case work, group work, community organisation, welfare administration, social work research, social action

Care giver issues - Needs, burden, coping and training; training for caregivers of institutions for the elderly.

National Policy on Older Persons, Legal and governmental welfare benefits for senior citizens, Role of HelpAge India and other prominent Organisations working for elderly.

International scenario

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5. Dey, A. B (Ed.) 2003 — Ageing in India: Situation Analysis and Planning for the Future. New Delhi / WHO and AIIMS.

6. Emmatty, Leena. M. 2008 — An insight into Dementia Care in India. New Delhi, Sage Publications,.

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12. Vineeta B Pai 2000 — Coping with Retirement, UNESCO CLUB, Naganur, Belgaum

JOURNALS.

1. Indian Journal of Gerontology, C-207, Manu Marg, Tilak Nagar, Jaipur 302 004

2. R & D Journal of Helpage India . C-14, Qutab Institutional Area, New Delhi, 110016.

Open Elective

Paper Title: MANAGEMENT OF NON-GOVERNMENTAL ORGANIZATIONS

Credit pattern: L:T:P::3:1:0 **Total Credits: 4**

INTRODUCTION

This course aims at introducing to students the concepts and principles involved in managing non-profits, particularly NGOs.

OBJECTIVES

a. Develop an understanding about the role of NGOs in societal development.
b. Develop knowledge about management of NGOs.
c. Develop the ability to identify collaborative strategies between NGOs and Government institutions.

Course Content

UNIT I

Non Profits as Organisational Entities: Non-profits as modern organizational forms- NGOs as non profit organizations involved in development work - common denominators and overlaps in business, public and non- profit managements - legal – rational structure of non-profits - trusts, societies and companies special reference to Trust Act, Societies Registration Act and Companies Act

UNIT II

Organisational Design: Vision, Mission and Goals of NGOs - matching intervention paradigms with mission and vision – translating vision and mission into action – Role of Strategic Planning - Operational goals, Programmes and Projects - Division of responsibility, authority and power relations – Decision-making - Participation, empowerment, teamwork and ownership Voluntarism, Individual Autonomy and Organisational accountability, Transparency and Stakeholder Accountability - Knowledge generation and management - Leadership styles suited for NGOs.

UNIT III

NGO Environment: Interfacing with community and community based organizations - NGO-State relationship - Critical collaboration and autonomy - Managing and maintaining donor constituency – Other NGOs and CBO - Networking, Partnering, Collaborating, etc. – Relating to market and business-NGI- Corporate relationship.

NGO Capacity Building - Building the competencies in NGOs - Identification and procurement of right competencies, Training and development and performance appraisal – Organisational – techno - managerial capacity, Capacity for independence and autonomy and capacity for learning and change.

UNIT IV

Resource Management for Non- Profits:

Resource Mobilisation for NGO - Non-financial resource, natural resources, physical resources in the form of common property - Human capital resources and social capital financial resource – Institutional and non-institutional sources of funding - National and international Fund-raising strategies - Foreign contributions - Statutory obligations.

Accounting for Non- Profit Organisations: Basic accounting principles and concepts- Preparation and analysis of financial statements- Ratio analysis, cash flow and fund flow analysis - Responsibility accounting, performance budgeting and zero base budgeting; Financial Management: Investment, Financing – Management of working capital.

REFERENCES

1. Chowdhary, D. P 1981. Role of Voluntary Action in Social Welfare Development, New Delhi, Sidhartha Publications.

2. Drucker, Peter, 1983 Managing the Non-Profit Organisation, New Delhi, Macmillan

3. Gangrada, K.D, 1988 Social Welfare and Social Development, New Delhi, Northern Book Centre

4. Garain S, 1998 Organizational Effectiveness of NGO's, Jaipur University Book House.

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6. Kapoor, K.K, 1986 — Directory of Funding Organisations, Delhi, Information and News Network.

7. PRIA, 1989 — NGO – Government Relations, Delhi, PRIA

8. PRIA, 1991 — NGOs in India: A Critical Study, Delhi, PRIA

9. Sachdeva, D.R, 1998 — Social Welfare Administration in India, Allahabad, Kitab Mahal.

10. Weiner, M, 1982 — Human Service Management, Illinois, The Dorsey Press.

Master's level even semester (IV Semester)

Even Semester

Paper Title: EMPLOYEE RELATIONS AND LEGISLATIONS

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

The purpose is to provide an in-depth knowledge about the relationship between employer, employee and the state, to bring out the importance of cordial employee relations for organizational productivity and gain an understanding of the mechanism of inter-personal relations, collective bargaining and productivity improvement functions in the organisation through involvement of all groups.

OBJECTIVES

a. Develop the skills of interpersonal relationship as per organizational requirement.
b. Understand the trends and dynamics between the partners in the organisation.
c. Enhance the knowledge on organisational performance, role and responsibility.
d. Develop the knowledge on various statutory / legal aspects influencing the organizations.

e. To stimulate thinking on rationale behind the Laws and their enforcement.

Course Content

UNIT I

Employee relations, History of industria1ization in India - Issues related to employees in organized and unorganized sector.

Concept, Definition, Philosophy and Principles of employee relations. Employee relations with special reference to Occupation - Safety - Health and Environment (OSHE) Education.

Analysis of the terms ‘industry’ and ‘industrial dispute’, industrial discipline – misconduct, disciplinary proceedings.

Domestic Enquiry: Contents and Process, Principles of Natural Justice, Tribunal; Discharge/Dismissal.

UNIT II

Trade Unions: Trade Unionism in India, emergence, history and growth, Trade Union as an organization – Various Trade Unions in India, Trade Union policies, Role of Trade Unions in India, Employers’’ Associations – Objectives, structure and activities. Contemporary issues in employee relations.

UNIT III

Employee Legislations: - The Payment of Bonus Act, 1965, Employees Provident Fund (and Misc. Previsions) Act 1952, Workmen's Compensation Act 1923, Employees State Insurance Act 1948, Payment of Gratuity Act, 1972,Child Labour (Prohibition and Regulation) Act, 1986.

Fundamentals of Labour laws, The Constitution of India: Preamble, Fundamental Rights including writs, Directive Principles of State Policy, The Factories Act 1948, The Contract Labour (Regulation and Abolition) Act 1970,The Minimum Wages Act 1948 and The Payment of Wages Act 1936; The Apprentices Act, 1961,The Maternity Benefit Act 1961.

UNIT IV

The Trade Union Act 1926, The Industrial Employment (Standing Orders) Act 1946, The Industrial Dispute Act 1947, The Employment Exchanges (Compulsory Notification of Vacancies) Act 1958. Introduction to Right to Information Act, Intellectual Property Rights, Patent Law, Copyrights, Trademark Law.

Collective Bargaining: Definitions, characteristics, critical issues in collective bargaining, theories of collective bargaining, Hick's Analysis of Wages settlement.

under collective bargaining, conflict-choice model of negotiation, Behavioral Theory of Labor Negotiation, Collective Bargaining in India, Collective bargaining in practice, levels of bargaining, coverage and duration of agreements, administration of agreements, negotiating a contract, the negotiation process, effective negotiation, negotiation and collective bargaining, post negotiation – Administration of the agreement.

Employee relations in knowledge based industry - Concepts of self-managed teams (SMT) - Changing employee/ employer and trade union relationship. Current rules of Taxation of Salaries.

Labor Welfare Officer - Duties and functions; Social Work in Industry.

REFERENCES

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2. Arora, M, 2005 — Industrial Relations, New Delhi, Excell Books.
3. Dasgupta, S. K. — Industrial Law, Sterling Publishers Pvt. Ltd.

4. Devar, R. S. 1967 — Personnel Management and Industrial Relations, New Delhi, Vikas Publishing House.

5. Joseph, T.M. 2009 — Industrial Law, Mumbai, Himalaya Publications Pvt., Ltd.

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27. Yoder, D. 1972 — Personnel Management an Industrial Relations, New York, Prentice-Hall India.

Even Semester

Paper Title: **MENTAL HEALTH AND PSYCHIATRIC SOCIAL WORK**

Credit pattern: L:T:P::2:1:0 **Total Credits: 3**

INTRODUCTION

This course is to provide awareness about mental health and mental health problems and also application of social work in mental health settings.

OBJECTIVES

a. Understand the concepts 'mental health' and 'mental illness'.
b. Understand the signs and symptoms, etiology, diagnosis and treatment of mental health problems.
c. Understand different services for the care of mentally ill.
d. Understand historical background of psychiatric social work in India and abroad. Understand the nature of psychiatric social work services and relevance of team work.
e. Understand the nature of collaboration with voluntary organisations for the welfare of mentally ill.
f. Identify the issues related to psychiatric social work department in hospitals and community mental health settings.

Course Content

UNIT I

Concept of mental health and mental illness - Mental health as a part of general health - Misconceptions about mental illnesses. General approaches to the mentally ill - International Classification of Mental Disorders.

Signs, symptoms, etiology, diagnosis, prognosis and management of the following:

- Neuroses
- Psychoses
- Psycho physiologic disorders
- Personality disorders

- Psychiatric disturbances in children and adolescents
- Organic psychotic conditions

- Mental retardation.

UNIT II

Introduction to Psychiatric Social Work: Meaning and Scope - Historical background of psychiatric social work in India and abroad - Reasons for its development as a specialty. Application of social work methods and other related techniques used in the field - Multi-disciplinary approach and team work in mental health care - Problems of hospitalization - Impact of mental illness on the patient, family and community.

Practice of Social Work: Importance of home visit and visit to the place of work - Role of family in the treatment of mentally ill - Preparing the family and community for the return of the affected individual, follow-up.

UNIT III

Care of mentally ill: Day-care centre, night-care centre, half-way-home, sheltered workshop, Occupational therapy units - Role of social worker and role of voluntary organisations.

Role of voluntary organisations, governmental-agencies and paraprofessionals in the welfare of mentally ill.

Role of social worker in mental health centers, departments of psychiatry in general hospitals, child guidance clinics, community mental health units, correctional institutions, industries, and family welfare centres.

Role of social worker with head injured, paraplegics and epileptics.

Role of social worker in the management of substance abuse – Educational avenues in psychiatric social work - Research avenue in the field of mental health for social workers.

UNIT IV

Organisation of psychiatric social work department - Functions; and collaboration with other departments.

Community mental health and social work, NMHP, Innovations like Satellite clinics, district mental health programme etc.

Rehabilitation and Acts: Occupational therapy - Principles and practice - Psychosocial rehabilitation.

Mental Health Act, 1987.

The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995.

REFERENCES

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16. Jordan, William. 1972 — The Social Worker in Family Situations, London: Routledge and Kegan Paul.

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19. Page, J. D. 1983 — Abnormal Psychology, New York, McGraw-Hill.

20. Robbins, Arthur J. 1957 — Mental Hospitals in India and Social Work Service, Delhi School of Social Work.

21. Strean, Herbert S. 1979 — Psychoanalytic Theory and Social Work Practice, New York: Free Press.

22. Stroup, H. H. 1960 — Social Work - An Introduction to the Field, (Chapter 9: Psychiatric Social

23. Todd,F.Joan.1967 — Social Work with the Mentally Subnormal, New York: Routledge and Kegan Paul.

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25. Yelloly, Margaret. 1980 — Social Work Theory and Psychoanalysis, New York: Van Nostrand Reinhold Company.

26. National Mental Health Programme for India

Even Semester

Title: **MAJOR PROJECT**

Credit pattern: L:T:P::0:0:4 **Total Credits: 4**

Students are given broader guidelines for undertaking empirical evidence-based project in the fourth semester, either independently or by forming a small team comprising of three to four students. In case of group project work, the group will be formed by the college or the university department by adopting random method of selection. The project shall comprise of selection of the topic, methodological details, analysis, interpretation and deductions made. The respective college / the department of the university will prepare the set of guidelines for presenting the report.

Evaluation of the Project will be done along with the viva-voce examination by the viva-voce committee constituted for the assessment of social work practicum or similar committee may be constituted, if required.

Even semester

Title : **SOCIAL WORK PRACTICUM – V**

Credit pattern: L:T:P::0:0:3 **Total Credits: 3**

Concurrent practice learning of two-days a week - on going learning of practice is an opportunity to develop intervention skills in reality situations. This entails learning social work practice for two, or two and a half days or its equivalent, each week of the semester. The learners may be placed in agencies or in communities to initiate and participate in direct service delivery.

Practice learning is a vital component of the educational opportunity to be provided to the learner. The teaching-learning process must be designed to help the learner to move on the mastering strategies, skills and techniques to practice social work.

Even semester:

Title: **SOCIAL WORK PRACTICUM – VI**: (BLOCK PLACEMENT)

Credit pattern: L:T:P::0:0:3 **Total Credits: 3**

Block Placement - enables learners to integrate learning and generate newer learning by participating in the intervention process over a period of 6 weeks continuously, in a specific agency. Usually, block field work is provided at the end of the two-year programme. There shall be a professionally qualified worker in the setting willing to plan orientation and provide consultation, when needed.

Even semester:

Paper Title: **HUMAN RESOURCE DEVELOPMENT AND EMPLOYEE WELLNESS**

Credit pattern: L:T:P::2:0:0 **Total Credits: 2**

INTRODUCTION

The purpose of this course is to provide practical exposure and knowledge in behavioural science to develop skills not only to understand and analyse problems but also to develop a problem-solving approach to issues.

OBJECTIVES

a. To develop multi facets of the personality and to build self confidence.
b. To develop a spirit of continuous learning and innovation.
c. To strengthen the competency base of individuals, teams and organization and also familiar with the organizational culture.
d. Understand and further the organization culture.
e. To appreciate the importance of bottom-line focus to the Human Resource function and trend toward HR Accountability.
f. To understand the various approaches to and techniques of measuring HR issues.
g. To create awareness of different types of information systems in an organization so as to enable the use of computer resources efficiently, for effective decision- making.

Course Content

UNIT I

Human Resource Development (HRD): Concept, origin and needs for HRD; Overview of HRD as a Total system; Approaches to HRD; human capital approach; social psychology approach and poverty alleviation approach; HRD and its dimensions, Competency Mapping.

UNIT II

HRD Interventions: Performance Measurement Systems – Fundamental issues. Feedback sessions. Organizational goal setting process, Key Result Area (KRA) and Key Performance Indicator (KPI),Coaching, Mentoring, career planning, career development, reward system, quality of work life. HRIS: - Computers and computer based Information Systems. Measuring HR : Changing role of HR, HR as a strategic partner, the need for measuring HR. Approaches to measuring HR: - Competitive Benchmarking, HR Accounting, HR Auditing, HR Effectiveness Index, HR Key Indicators, HR MBO (Management by Objectives).

Instructional Technology: Learning and HRD; Building Learning Organization: measuring learning – the intellectual capital, architecting a learning organization, Organizational Learning, models and curriculum; factors and principles of learning; group and individual learning; HRD trends; behavioural sciences; transactional analysis; Concepts of continuous learning, behavior modeling and self-directed learning; evaluating the HRD effort; data gathering; analysis and feedback; HRD experience in Indian organizations; future of HRD - Organization culture and development.

UNIT III

Talent Development: Concept and importance; Training Need Analysis, process of training, designing and evaluating training and development programs. Use of information technology, Types and Methods of Training: Training within industry (TWI), External; on the job and off the job; Training methods; lecture, incident process, role play, structured and unstructured discussion, in-basket exercise, simulation, vestibule, training, management games, case study, programmed instruction, team development, and sensitivity training; review of training programs.

UNIT IV

Employee Wellness: Concept, philosophy, principles and scope; Importance and relevance of wellness programs, Role of Welfare Officer as per the Factories Act 1948. Relevance - with reference to Accidents, Absenteeism, Alcoholism, Domestic Violence: Preventive and remedial measures. **Social Security**: concept, types, legal framework

Employee participation: concept, levels of participation, barriers

Employee Counseling. Role of Counselor in Organizations. Corporate Social Responsibility (CSR): CSR as a business strategy.

Environmental management systems ISO 14001, ISO 26000: Social responsibility guidance standard, environmental impact assessment.

REFERENCES

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Even Semester
Even

Title: CASE STUDIES

Credit pattern: L:T:P::0:0:2 **Total Credits: 2**

Every Candidate is expected to take up five cases, study them in depth and present the intervention, if any. Case refers to a unit of study – an individual, an institution, a community or an incident. The candidate has to work under the guidance of faculty member and submit the report on or before the date prescribed.

The university or the college concerned can develop guidelines for undertaking case studies. However, the students are encouraged to start his/her work on case studies from the beginning of the course.

Evaluation of the case study will be done along with the viva-voce examination by the viva-voce committee constituted for the assessment of social work practicum or similar committee may be constituted, if required.

Open Elective

Paper Tile: **DISASTER MANAGEMENT**
Credit pattern: L:T:P::3:1:0 **Total Credits: 4**

INTRODUCTION

The course aims at introducing students to acquire the required knowledge and skills in disaster management.

OBJECTIVES

a. Understand key concepts, theories and approaches of disaster management with specific reference to Indian context
b. Develop skills to analyse factors contributing to disaster
c. Develop an understanding of the process of disaster management
d. Develop an understanding of the social worker's role in the team for disaster management.

Course Content

UNIT I

Disasters: Concept, types and impact - Famine, floods, cyclones, hurricanes, warfare, earthquake, volcanoes; traditional and modern disaster threats and care factor, classification of disasters; Disaster management - Definition and concept; approaches to disaster management, importance and relevance of disaster management in the present environmental scenario, cases studies of disaster management.

UNIT II

Disaster and Social Work Intervention: Scope of disaster related intervention, intervention during disaster impact stage, trauma counseling and crisis intervention, post disaster management, damage assessment and long term rehabilitation and reconstruction, networking and co-ordination between government, NGOs, donor agencies, local bodies, police, military etc.

UNIT III

Disaster Prevention and Preparedness: Vulnerability analysis, hazard mapping, community based disaster preparedness programmes, training for CBDP, preparedness for post-disaster emergency response and long term rehabilitation, organization and planning, logistics; resource utilization, specialized skills and training needs; public awareness and education; first-aid training, civil defense training.

UNIT IV

Institutions and Instruments in Disaster Response: international decade for natural disaster reduction and UN resolutions, administration of relief in India - National, state, district and local levels; Disaster related legislations and policies; national and international donor agencies; NGOs, mental health institutions in disaster management and relief.

REFERENCES

1. IFRC, 2005 World Disaster Report

2. Birnabaum, F, Coplon, J and Scharff, T 1973 "Crisis intervention after a Natural Disaster", Social Case Work, Vol. 54, No. 9, 545-551

3. Blaufard H and Levine J 1967 "Crisis intervention in an Earthquake", Social Work, Vol.17, No.4, 16-19

4. Brahme S and Gole P, 1967 Deluge in Poone, Poone: Asia Publishing House

5. Chen, L 1973 Disaster in Bangladesh: Health Crisis in a Developing Nation, New York,

Oxford University Press.

6. Fritz, C.E 1968 "Disaster", Sills D (Ed.) Internatioanl Encyclopedia of Social Science. Vol 4 USA: The MacMillan Company and the Free Press, 202-208.

7. Gangrade, K.D and Dhadde S, 1973 Challenge and Response, Delhi: Rechna Publication.

8. Grossman, L 1973 "Train Crash: Social Work and Disaster Services" Social Work Vol.18, No.5, 38-44

9. Hoff, A 1978 "People in Crisis", Understanding and Helping, California: Addison Wesley Publishing Company.

10. Joint Assistantance Centre 1980 Natural Disaster, New Delhi: Adhyatma Sadhana Kendra

11. Lindomann, E 1944 "Symptomology and Management of Acute Grief", American Journal of Psychiatry, Vol. 101, pp.141-148

12. Shader, I and Schwartz A 1966 "Management of Reaction of Disaster", Social Work, Vol. 11, No. 2.

13. Siporin, M 1966 "The Experience of Aiding the Victims of Hurricane "Betsy", Social Service Review, Vol. 10

14. Wolfenstein, M 1977 Disaster: A Psychological Essay, New York: Arno Press

Open Elective:

Paper Title: **CORRECTIONAL ADMINISTRATION AND SERVICES**

Credit pattern: L:T:P::3:1:0 **Total Credits: 4**

INTRODUCTION

This course introduces the basics of the administration of correctional institutions and the integrated services provided to persons in conflict with law so as to reintegrate them into the mainstream of society as law abiding citizens.

OBJECTIVES:

a. To acquaint with the correctional institution and non-institutional programmes.
b. To understand the different services for juvenile, young and adults offenders and also to understand the legal provisions and procedures for their assistance.
c. To understand the role of custodial staff in the process of correction and rehabilitation.
d. To understand the structure, function ,treatment and facilities provided by the institutions.

Course content

UNIT I

Institutional systems - Introduction to correctional administration. History of Correctional Administration in India - Concept, objectives and functions of Correctional administration.
Institutional protection for children and young offenders - Juvenile Justice (Care and Protection of Children) Act -2002, 2005.
Observation Home, Juvenile Home for Boys and Girls and their functions. District Shelter for boys and girls and their functions.

UNIT II

Institutional Treatment for Released Offenders and Convicts.
Prison - Historical development of prison system- Indian Prison Act, Prison Manual (Karnataka).

Prison administration, prison labor, prison discipline and prison education Pre-release programmes, prisoners‟ welfare board.

Open-air prison - Historical development of Open-air prison system, organization and administration.

UNIT III

Non-institutional systems.

Probation and Parole - Historical development of probation system, principles and procedure.

Parole - Historical development of parole - functions and powers of Parole Board, Conditions under the Prison Manual. Indian Penal Code, provisions on Parole.

Pre-release preparation of the parolee.

UNIT IV

After care services:

Legal provision for establishing social institution.

Provision for assistance to released prisoners - Role of voluntary organization, corporate bodies and the state in the rehabilitation.

Prevention of Immoral Traffic Act - Its objectives; State Home for Women (Sthrinikethana) Citizen committees, Police help-line.

Social work intervention and Role of social worker in the prison administration. Social work practice in correctional services.

REFERENCES:

1. Ahuja Ram, 2006 Criminology: New Delhi, Rawat Publications

2. Afzal Qadri, S.M, and Ahmad Siddiqiue‟s, 2005 — Criminology: Problems & Perspectives, Lucknow, Eastern Book Co.

3. Paranjape N.V, 1998 — Criminology and Penology; Allahabad: Central Law Publications

4. Sethna, M.J, 1964 — Society and the Criminal, Bombay, Kitab Mahal

5. Sirohi, J.P.S, 1983 — Criminology and Correctional Administration, Allahabad, Allahabad Law Agency

6. Srivastava, Surendra Sahai 2007 — Criminology, Criminal Administration; Allahabad, Allahabad Central Law Agency

Appendix I

PATTERN OF QUESTION PAPER

Question Paper Pattern

(The Question paper comprising of 3 parts: A,B and C as follows)

Title of the Paper **Paper Code:**
Duration: 3 hours
Max.Marks:70

PART – A

There are 6 questions and a candidate has to answer any 4 questions. Each question carries 4 marks. This part covers all units of the syllabus.

Answer any Four 4x4=16

1.
2.
3.
4.
5.
6.

PART – B

There are 6 questions and a candidate has to answer any 4 questions. Each question carries 10 marks. This part covers all units of the syllabus.

Answer any Four 4x10-40

7.
8.

9.
10.
11.
12.

PART – C

There is a single question (with no choice) such as case study (may contain sub questions) covering entire syllabus carrying 14 marks.

Answer the following. 1x14=14

13.

Mahajana Education Society (R)
SBRR Mahajana First Grade College (Autonomous)
Affiliated to University of Mysore,
Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence
Post Graduate Wing

Pooja Bhagavat Memorial Mahajana Education Centre
K.R.S. Road, Metagalli, Mysore-570 016, Karnataka

Master of Science in Chemistry
(Choice Based Credit System)

Regulations and Syllabus

(Subjected to the modification to be made from time to time)

Effective from Academic Year 2023 -2024

GUIDELINES AND REGULATIONS LEADING TO MASTER OF SCIENCE IN CHEMISTRY (TWO YEARS - SEMESTER SCHEME UNDER CBCS-CAGP)

Programme details

Name of the Department	: PG Department of Chemistry
Subject	: Chemistry
Faculty	: Science
Name of the Programme	: Master of Science (M.Sc.) in Chemistry
Duration of the Programme	: 2 years divided into 4 semesters

Programme Objectives

- To provide the latest subject matter both theory as well as practicals in such a way to foster their core competency and discovery learning. A chemistry postgraduate as envisioned in this framework would be sufficiently competent in the field to understand further discipline specific studies as well as to begin domine related employment.
- To mould a responsible citizen who is aware of most basic domain-independent knowledge including critical thinking and communication.
- Enable the graduate to prepare for national as well as international competitive examinations, especially UGC-CSIR NET and UPSC civil service examinations.

Programme Outcomes

- Students will have a strong foundation in the fundamentals and applications of current theoretical and practical chemistry in Analytical, Inorganic, Organic and Physical Chemistry.
- Students will be able to design and carry out scientific experiments and accurately record and analyze the results of the experiments.
- Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
- Students will be able to explore new areas of research in both chemistry and allied fields such as Biochemistry, Material Chemistry, Pharmaceutical chemistry and Chemical biology and related technology.
- Students will understand the central role of chemistry to our society which includes understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
- Create awareness and sense of responsibilities towards environment and apply knowledge to solve the issues related to Environmental pollution.
- Apply knowledge to build up small scale industry for developing endogenous product
- Provide an opportunity to act as team player by contributing in laboratory, field-based situation and industry.

- A post-graduation in Chemistry provides the opportunities in educational sector, pharmaceutical companies and chemical industries.

Programme Specific Outcomes

- Global level research opportunities to pursue Ph.D. programme, targeted approach of CSIR – NET and competitive civil service examinations**.**
- Enormous job opportunities at all levels of teaching, chemical, pharmaceutical, food products, life oriented material industries**.**
- Specific placements in R & D and many pharmaceutical & other industries**.**
- Facile development for the synthesis of biologically significant organic molecules using the green route for chemical reactions for sustainable properties**.**
- To inculcate the scientific temperament in the students and outside the scientific community.
- Learnt to handle sophisticated equipment for the determination and characterization of chemical compounds.
- Use of the latest chemistry software to avoid the laborious work in research**.**

Pedagogies used in the programme

- Conventional method such as black board and chalk, and modern methods like power point presentation and information and communications technology (ICT) are used in class room teaching.
- Molecular models are used to teach molecular symmetry, stereochemistry and solid state chemistry topics.
- Each student performs experiments as per the protocol in practical classes.
- For the preparation of new compounds, each student can adopt new experimental setup, and also exposed to different analytical instruments for qualitative and quantitative analyses. In addition to this, students will acquire skill to handle various instruments independently.
- Students will be presenting seminars in each semester.
- Each student will be subjected to viva-voce examinations in every semester.
- Every student will work for project on a small research problem.
- Rigorous training will be giving for every student to interpret spectral data in the respective course including their dissertation.
- Special lectures are delivered by eminent scholars from different intuitions.
- National/International conferences are organized to upgrade the subject knowledge.

GENERAL REQUIREMENTS

Scheme of instructions

1. A Masters Degree programme is of 4 semesters-two Years duration. A candidate can avail a maximum of 8 semesters – 4 years (in one stretch) to complete Masters Degree (including blank semesters, if any). Whenever a candidate opts for blank semesters, he/she has to study the prevailing courses offered by the department when he/she continues his/her studies.

2. A candidate has to earn a minimum of 76 credits, for successful completion of a Master Degree. The 76 credits shall be earned by the candidate by studying Hardcore, Soft Core and Open Elective. A candidate may earn another 04 credits by studying MOOCs/SWAYAM courses.

3. **Minimum for Pass:** In case a candidate secures less than 30% in C_1 and C_2 put together, the candidate is said to have DROPPED the course, and such a candidate is not allowed to appear for C_3.

4. In case a candidate secures less than 30% in C_3, or secures more than 30% in C_3 but less than 50% in C_1, C_2 and C_3 put together, the candidate is said to have not completed the course and he/she may either opt to DROP the course or to utilize PENDING option.

5. **Credits (Minimum) Matrix:** A candidate has to study 48 credits from hard Core, a minimum of 24 credits in Soft Core (sum total of 4 semesters) and 04 credits in Open Elective (II or III Semester) for the successful completion of the Masters Degree programme.

6. All other rules and regulations hold good which are governed by the University of Mysore from time to time.

Definitions

1. In the Choice Based Credit System – Continuous Assessment Grading Pattern (CBCS-CAGP), programme means a course and a course means a paper.
2. **HC:** Hard Core; **SC:** Soft Core; **OE:** Open Elective

GENERAL SCHEME WITH RESPECT TO ASSESSMENT OF CREDITS

Semester	Hard Core		Soft Core			Open Elective
	Theory			Theory	Practicals	
I	I	3+0+0=3	A	2+0+0=2*	0+0+4=4[a]	--
	O	3+0+0=3	I	2+0+0=2*	0+0+4=4[a]	
	P	3+0+0=3	O	2+0+0=2*	0+0+4=4[a]	
	A	3+0+0=3	P	2+0+0=2*	0+0+4=4[a]	
II	I	3+0+0=3	A	2+0+0=2*	0+0+4=4[a]	4+0+0=4[b]
	O	3+0+0=3	I	2+0+0=2*	0+0+4=4[a]	
	P	3+0+0=3	O	2+0+0=2*	0+0+4=4[a]	
	G	3+0+0=3	P	2+0+0=2*	0+0+4=4[a]	
III	I	3+0+0=3	A	2+0+0=2	0+0+2=2[a]	4+0+0=4[b]
	O	3+0+0=3	I	2+0+0=2	0+0+2=2[a]	
	P	3+0+0=3	O	2+0+0=2	0+0+2=2[a]	
	G	3+0+0=3	P	2+0+0=2	0+0+2=2[a]	
IV	I	3+0+0=3	A	2+0+0=2	0+0+2=2[a]	--
	O	3+0+0=3	I	2+0+0=2	0+0+2=2[a]	
	P	3+0+0=3	O	2+0+0=2	0+0+2=2[a]	
	D	0+0+3=3[c]	P	2+0+0=2	0+0+2=2[a]	
Total Credits	48		24(48)			04

NOTE

A–Analytical; I–Inorganic; O–Organic; P–Physical; G-Spectroscopy; D-Dissertation/Project Work; (L+T+P)-Theory + Tutorial + Practical

*Courses are common for both first and second semesters.

a) All students should opt practicals in soft core compulsorily in all semesters.

b) Courses are common for both II and III Semesters and the candidate can opt either in II or III semester (For non-chemistry students only).

c) Dissertation/Project work which is offered by the department during IV semester.

SCHEME OF STUDY AND EXAMINATION FIRST SEMESTER HARD CORE PAPERS

Course Code	Title	Contact Hours/ week	Credits	Max. Marks	Internal Assessment Marks		Semester End Exams (C_3)	
					C_1	C_2	Duration (hrs)	Marks
CHI HCT: 1.1	Concepts & Models of Inorganic Chemistry	3	3	100	15	15	3	70
CHO HCT:1.2	Stereochemistry & Reaction Mechanism	3	3	100	15	15	3	70
CHP HCT: 1.3	Basic Physical Chemistry	3	3	100	15	15	3	70
CHA HCT: 1.4	Analytical data assessment and separation techniques	3	3	100	15	15	3	70

SOFT CORE PAPERS

Course Code	Title	Contact Hours/ week	Credits	Max. Marks	Internal Assessment Marks		Semester End Exams (C_3)	
					C_1	C_2	Duration (hrs)	Marks
	Titrimetric Analysis	2	2	100	15	15	3	70
	Chemistry of Selected Elements	2	2	100	15	15	3	70
	Chemistry of Natural Products-I	2	2	100	15	15	3	70
	Biophysical Chemistry	2	2	100	15	15	3	70

SOFT CORE PRACTICALS

Course Code	Title	Contact Hours/ week	Credits	Max. Marks	Internal Assessment Marks		Semester End Exams (C_3)	
					C_1	C_2	Duration (hrs)	Marks
CHA SCP: 1.1/2.1	Analytical Practicals-I	8	4	100	15	15	6	70
CHI SCP: 1.2/2.2	Inorganic Practicals-I	8	4	100	15	15	6	70
CHO SCP: 1.3/2.3	Organic Practicals-I	8	4	100	15	15	6	70
CHP SCP: 1.4/2.4	Physical Practicals-I	8	4	100	15	15	6	70

SECOND SEMESTER
HARD CORE PAPERS

Course Code	Title	Contact Hours/ week	Credits	Max. Marks	Internal Assessment Marks		Semester End Exams (C_3)	
					C_1	C_2	Duration (hrs)	Marks
CHI HCT: 2.1	Coordination Chemistry	3	3	100	15	15	3	70
CHO HCT: 2.2	Synthetic Organic Chemistry	3	3	100	15	15	3	70
CHP HCT: 2.3	Principles of Physical Chemistry	3	3	100	15	15	3	70
CHG HCT: 2.4	Molecular Symmetry and Spectroscopy	3	3	100	15	15	3	70

NOTE

Soft Core Theory: All courses are same as that described in first semester.

Practical's: Same as that of I Semester. Students who have conducted Analytical and Inorganic or Organic and Physical Practical's in the I Semester will get interchanged during II Semester.

OPEN ELECTIVE (for Non-Chemistry Students only)

Course Code	Title	Contact Hours/ week	Credits	Max. Marks	Internal Assessment Marks		Semester End Exams (C_3)	
					C_1	C_2	Duration (hrs)	Marks
CH OET: 2.1/3.1	General Chemistry	4	4	100	15	15	3	70

NOTE: The students can study this course either in II or III Semester.

THIRD SEMESTER
HARD CORE PAPERS

Course Code	Title	Contact Hours/ week	Credits	Max. Marks	Internal Assessment Marks		Semester End Exams (C_3)	
					C_1	C_2	Duration (hrs)	Marks
CHI HCT: 3.1	Advanced Inorganic Chemistry	3	3	100	15	15	3	70
CHO HCT: 3.2	Organometallic and Photochemistry	3	3	100	15	15	3	70
CHP HCT: 3.3	Advanced Physical Chemistry	3	3	100	15	15	3	70
CHG HCT: 3.4	Chemical Spectroscopy	3	3	100	15	15	3	70

SOFT CORE PAPERS

Course Code	Title	Contact Hours/ week	Credits	Max. Marks	Internal Assessment Marks		Semester End Exams (C_3)	
					C_1	C_2	Duration (hrs)	Marks
CHA SCT: 3.1	Electrochemical methods of chemical analysis	2	2	100	15	15	3	70
CHI SCT: 3.2	Frontiers in Inorganic Chemistry	2	2	100	15	15	3	70
CHO SCT: 3.3	Chemistry of Natural Products-II	2	2	100	15	15	3	70
CHP SCT: 3.4	Material Chemistry	2	2	100	15	15	3	70

SOFT CORE PRACTICALS

Course Code	Title	Contact Hours/ week	Credits	Max. Marks	Internal Assessment Marks		Semester End Exams (C_3)	
					C_1	C_2	Duration (hrs)	Marks
CHA SCP:3.1/4.1	Analytical Practicals-II	4	2	100	15	15	6	70
CHI SCP:3.2/4.2	Inorganic Practicals- II	4	2	100	15	15	6	70
CHO SCP:3.3/4.3	Organic Practicals - II	4	2	100	15	15	6	70
CHP SCP:3.4/4.4	Physical Practicals - II	4	2	100	15	15	6	70

Note: OPEN ELECTIVE (for Non-Chemistry Students only)

The course is same as in II Semester

FOURTH SEMESTER

HARD CORE PAPERS

Course Code	Title	Contact Hours/ week	Credits	Max. Marks	Internal Assessment Marks		Semester End Exams (C_3)	
					C_1	C_2	Duration (hrs)	Marks
CHI HCT: 4.1	Bioinorganic Chemistry	3	3	100	15	15	3	70
CHO HCT: 4.2	Heterocyclic and Bioorganic Chemistry	3	3	100	15	15	3	70
CHP HCT: 4.3	Nuclear, Radiation and Photochemistry	3	3	100	15	15	3	70

SOFT CORE PAPERS

Course Code	Title	Contact Hours/ week	Credits	Max. Marks	Internal Assessment Marks		Semester End Exams (C_3)	
					C_1	C_2	Duration (hrs)	Marks
CHA SCT: 4.1	Automated and Methods Chemical Analysis	2	2	100	15	15	3	70
CHI SCT: 4.2	Bioinorganic Photochemistry	2	2	100	15	15	3	70
CHO SCT: 4.3	Medicinal Chemistry	2	2	100	15	15	3	70
CHP SCT: 4.4	Quantum Chemistry and Biosensors	2	2	100	15	15	3	70

NOTE:

Practicals: Same as that of III Semester. Students who have conducted Analytical and Inorganic or Organic and Physical Practicals in the III Semester will get interchanged during IV Semester.

SCHEME OF EXAMINATION FOR C1, C2 AND C3 COMPONENTS

Preamble

In view of the CBCS syllabus, following is the model distribution of marks for C1, C2 and C3 Components. At a glance, the model includes HC, SC and OE courses for the assessment of marks.

The following is the scheme which will be followed for the assessment of marks for HC, SC and OE courses irrespective of the credits associated with each course. 30% of the marks will be assessed for internals (C1 and C2) and remaining 70% will be for the Semester end Examinations (C3). Each course carries 100 marks and hence 30 marks will be allotted to internals and remaining 70 marks will be for Semester end Examinations. Out of 30 marks for internals, 15 marks will be allotted to each C1 and C2 components.

Each course (HC/SC/OE) consists of three components namely C1, C2 and C3. C1 and C2 are designated as Internal Assessment (IA) and C3 as Semester end Examination. Each course (HC/SC/OE) carries **100 Marks** and hence the allotment of marks to C1, C2 and C3 Components will be 15, 15 and 70 marks, respectively. i.e.,

C_1 Component	15 Marks	Assessment Marks
C_2 Component	15 Marks	
C_3 Component	70 Marks	Semester end Examination
Total	**100 Marks**	

The above Scheme will be followed for all the HC, SC and OE courses in all the four semesters.

1.HARD CORE (03 CREDIT COURSES)

Distribution of Marks for C1 and C2 Components

Assessment Marks (C1 + C2) consists of 30 marks. It will be divided into three parts *viz*., ***Internal Test, Home Assignment and Seminar***. Internal tests will be conducted during the 8th week of the semester for C1 and 16th week of the semester for C2. Home Assignment will be considered for C1 Component and Seminar for C2 Component only. Hence, a teacher from each unit of a course may be given one assignment (or in their personal interest one more may be given). Since each course has three units, the marks shall be divided equally. Allotment of marks for C1 and C2 is as follows: Out of 15 Marks for C1, Internal test will be conducted for 30 Marks (10 Marks from each unit and reduced to 10 Marks) and Home Assignment will be given for 05 Marks (Each Home Assignment from every unit will be assessed for 05 Marks and finally reduced to 05 Marks). Assessment Marks for C2 will be distributed as follows: Internal test will be conducted for 30 Marks (10 Marks from each unit and reduced to 10 Marks) and Seminar will be assessed for 20 Marks and finally its Marks will be distributed to each theory HC course. i.e.,

C_1		**C_2**	
Internal Test	30 Marks (10+10+10) **Reduced to 10 Marks**	Internal Test	30 Marks (10+10+10) **Reduced to 10 Marks**
Home Assignment	15 Marks (05+05+05) **Reduced to 5 Marks**	Seminar	20 Marks (05+05+05+05) **5 Marks will be distributed to each HC course**
Total	**15 Marks**	**Total**	**15 Marks**

Distribution of Marks for C3 Component (Semester end Examination)

The question paper is of 3 hrs duration with the Maximum of 70 Marks. The following question paper pattern will be followed for all the theory courses (HC/SC/OE). Question paper will have FIVE main questions. All the questions will cover all the units of the course with equal marks distribution. Q. No. 1 is of Medium/ Short Answer Type questions which will have nine questions and each question carries two marks. A student has to answer any seven questions. Q. No. 2 to 5 carries 14 marks each and a student has to answer all the four questions (*No Choice*). Each main question will have three sub-sections a, b, c. An examiner may set the questions like (4+4+6) or (4+5+5) or as his/her wish. However, sub-section 'c' will have an internal choice. i.e.,

Model Question Paper Pattern

Max. Duration: 3 Hr **Max. Marks: 70**

Note: *Answer all the questions. Each question carries 14 marks.*
***Q. N*o. 1**: Nine Medium/ Short Answer Type Questions and any seven should be answered. Each question carries TWO marks. **(7 × 2 = 14)**

***Q. N*o. 2 to 5:** All the four questions have to be answered (*No Choice*). Each question carries **FOURTEEN** marks. An examiner may set the questions like (4+4+6) or (4+5+5) or as his/her wish. However, sub-section c will have an internal choice. (*Two marks questions shall be avoided for 2 to 5*). **(4 × 14 = 56)**
a)
b)
c) **OR** c)

2. SOFT CORE (02 CREDIT COURSES)

Distribution of Marks for C_1 and C_2 Components

Assessment Marks (C_1 + C_2) consists of 30 marks. It will be divided into two parts viz., ***Internal Test and Home Assignment***. Internal tests will be conducted during the 8th week of the semester for C_1 and 16th week of the semester for C_2. As far as Home Assignment is concerned, the concerned teacher will assign one or two Home Assignments to each student. Since each course has two units, the marks will be divided equally. Allotment of marks for C_1 and C_2 is as follows: Out of 15 Marks for IA, Internal tests will be conducted for 20 marks and reduced to 10 marks, whereas Home Assignment is for 05 Marks. i.e.,

C_1		**C_2**	
Internal Test	20 Marks (10+10) **Reduced to 10**	Internal Test	20 Marks (10+10) **Reduced to 10**
Home Assignment	10 Marks (05+05) **Reduced to 05**	Home Assignment	10 Marks (05+05) **Reduced to 05**
Total	**15 Marks**	**Total**	**15 rks**

Distribution of Marks for C_3 Component (Semester End Examination)

The above described pattern (1.2) holds good in this case also.

3. PRACTICALS

The following Scheme will be applicable for all the four semesters (SC for chemistry students only)

Each practical consists of three components namely C_1, C_2 and C_3. C_1 and C_2 are designated as Internal Assessment (IA) and C_3 as Semester End Examination. Each practical carries **100 Marks** and hence the allotment of marks to C_1, C_2 and C_3 Components will be 15, 15 and 70 marks respectively. i.e.,

C_1 Component	15 Marks	Internal Assessment Marks
C_2 Component	15 Marks	
C_3 Component	70 Marks	Semester End Examination
Total	**100 Marks**	

Distribution of Marks for C_1 and C_2 Components

IA consists of **15 Marks**. It will be divided into three parts *viz.*, ***Internal Test, Continuous Assessment and Record***. Continuous assessment refers to the daily assessment of each student based on his/her attendance, skill, results obtained etc. Thus, 05 marks are allotted for Continuous Assessment. Internal tests will be conducted for 05 Marks during the 8th week of the semester for C_1 and 16th week of the semester for C_2. Finally, remaining 05 Marks will be for the record. i.e.,

C_1		**C_2**	
Internal Test	05 Marks	Internal Test	05 Marks
Continuous Assessment	05 Marks	Continuous Assessment	05 Marks
Record	05 Marks	Record	05 Marks
Total	**15 Marks**	**Total**	**15 Marks**

Distribution of Marks for C_3 Component (Semester End Examination)

The end examination will be conducted for **70 Marks/course** with a maximum duration of 6 hours. Two experiments will be given to each student which carries 30 Marks each. Each student will be subjected to Viva-Voce Examination for which 10 Marks is allotted. i.e.,

Two Experiments	30+30 Marks
Viva-Voce	10 Marks
Total	**70 Marks**

Note: Examiners have to set at least one experiment from each part in the semester end Examination (C_3).

4. DISSERTATION/ PROJECT WORK (03 CREDIT COURSE)

Each student is expected to undergo Dissertation/ Project Work under the guidance of the faculty of the department during the IV Semester.

4.1. Distribution of marks for C1 and C2 components

IA consists of 15 Marks; it will be divided into three parts viz., Attendance, Continuous Assessment and Work Progress. Continuous assessment refers to the daily assessment of each Student based on his or her skill, results obtained, literature survey etc. **C1** will be assessed during the 8th week of the semester and **C2** during the 16th week of the semester. Hence, the concerned guide will prepare the marks list based on the above said parameters for both **C1** and **C2** Components.

5.2. Distribution of marks for c 3 component (semester end Examination)

The end examination will be conducted for 70 Marks. Every student is supposed to prepare a hard copy of the findings of the work in the form of dissertation and submit for evaluation. This part will be assessed for 50 Marks. Each student will be subjected to Viva-Voce Examination for which 20 Marks is allotted. i.e.,

Evaluation of Dissertation	50 Marks
Viva-Voce	20 Marks
Total	70 Marks

6. AWARD OF GRADES:

The grade and the grade point earned by the candidate in the subject will be as given below.

Marks	Grade	Grade Point (GP = V x G)
30-39	4	V*4
40-49	5	V*5
50-59	6	V*6
60-64	6.5	V*6.5
65-69	7	V*7
70-74	7.5	V*7.5
75-79	8	V*8
80-84	8.5	V*8.5
85-89	9	V*9
90-94	9.5	V*9.5
95-100	10	V*10

Here, P is the percentage of marks (P=[(C_1 +C_2)+M] secured by a candidate in a course which is rounded to nearest integer. V is the credit value of course. G is the grade and GP is the grade point.

A candidate can withdraw any course within ten days from the date of notification of final results. Whenever a candidate withdraws a paper, he/she has to register for the same course in case it is hard core course, the same course or an alternate course if it is soft core/open elective. A DROPPED course is automatically considered as a course withdrawn. Overall cumulative grade point average (CGPA) of a candidate after successful completion, the required number of credits (76) is given by

CGPA =ΣGP / Total number of credits

7. CLASSIFICATION OF RESULTS

The final grade point (FGP) to be awarded to the student is based on CGPA secured by the candidate and is given as follows.

CGPA	FGP	
	Numerical Qualitative Index	Index
4 <= CGPA < 5	5	SECOND CLASS
5 <= CGPA < 6	6	
6 <= CGPA < 7	7	FIRST CLASS
7 <= CGPA < 8	8	
8 <= CGPA < 9	9	DISTINCTION
9 <= CGPA < =10	10	

Overall percentage=10*CGPA or is said to be 50% in case CGPA<5

FIRST SEMESTER

CHI HCT: 1.1. CONCEPT AND MODELS OF INORGANIC CHEMISTRY

Objectives:

- To study the structures of ionic crystals and simple molecules through VSEPR model.
- To learn acid-base concepts and chemical reactions in non-aqueous, ionic liquids and supercritical fluids as media.
- To study the chemistry of f-block elements.

Course outcome:

- Structures of ionic solids and their lattice energy calculations. Further, the use of VSEPR concepts in analyzing the structures of simple molecules.
- Various acid-base concepts and their applications in different fields. Also, understand the utility of various non-aqueous solvents in inorganic synthesis.
- The periodic properties of the elements, complete understanding of the chemistry of lanthanides, actinides and their applications.

Pedagogy:

- Familiarize the students with the periodic properties of the elements using modern periodic table.
- Teaching through conventional method such as black board and chalk, and modern methods like power point presentation.
- For teaching structures of solids, crystal models (MX and MX2 types) are used.

Course content

UNIT-I

[16 HOURS]

Structures and energetics of ionic crystals: Introduction, MX (NaCl, CsCl, ZnS) and MX_2 (fluorite, rutile, β-crystobalite, cadmium chloride and cadmium iodide) types. The perovskite and spinel structures. Thermodynamics of ionic crystal formation. Hydration energy and solubility of ionic compounds, Lattice energy, Born-Haber cycle, Born-Lande equation.The Kapustinskii's equation, Consequences of lattice enthalpies.Applications of lattice energetics. Ionic radii, factors affecting the ionic radii, radius ratio rules.

Structures and energetics of inorganic molecules: Introduction, Bent's rule, Energetics of hybridization. VSEPR model for explaining structure of molecules including fluxional molecule.

M.O. treatment of homo-nuclear and heteronuclear diatomic molecules. M.O. treatment involving delocalized π-bonding (CO_3^{2-} , NO_3^- , NO_2^-, CO_2 and N_3^-), M.O. correlation diagrams (Walsh) for triatomic molecules.

UNIT-II

[16 HOURS]

Modern concept of acids and bases: Lux-Flood and Usanovich concepts, solvent system and leveling effect. Hard-Soft Acids and Bases, Classification and Theoretical backgrounds.

Non-aqueous solvents: Classification of solvents, Properties of solvents (dielectric constant, donor and acceptor properties) protic solvents (anhydrous H_2SO_4, HF and glacial acetic acid)aprotic solvents (liquid SO_2, BrF_3 and N_2O_4). Solutions of metals in liquid ammonia, hydrated electron. Super acids and super bases. Heterogeneous acid-base reactions.

Ionic liquids: Molten salt solvent systems, Ionic liquids at ambient temperature, Reactions in and applications of molten salt/ionic liquid media.

Supercritical fluids: Properties of supercritical fluids and their uses as solvents. Supercritical fluids as media for inorganic chemistry

UNIT-III

[16 HOURS]

Chemical Periodicity: Review of periodic properties

Lanthanoid chemistry: General trends, Electronic, optical and magnetic properties. Abundance and extraction, **General principles**: conventional, solvent extraction and ion-exchange methods. Separation from monazite. Chemistry of principal oxidation states (II, III and IV). Stability of tetrahalides, dihalides and aqua ions of simple lanthanide compounds. Redox potentials.**Uses:** lanthanides as shift reagents, lanthanides as probes in biological systems. High temperature super conductors.

Actinoid chemistry: General trends and electronic spectra**.** Occurrence and preparation of elements, **Isolation of the elements**: thorium and uranium, enrichment of uranium for nuclear fuel, uranium hydrides, oxides and chlorides. Chemical reactivity and trend. Chemistry of trans- uranium elements.

Supramolecular Chemistry: Introduction, selectivity and Supramolecular Interactions.

References

1. Basic Inorganic Chemistry – 3rd edition. F.A. Cotton, G. Wilkinson and P.L. Gaus, John Wiley and Sons (2002).
2. Inorganic Chemistry, 3rd edition. James E. Huheey, Harper and Row Publishers (1983).
3. Inorganic Chemistry, 5th edition. G.L. Miessler, P. J. Fischer and D.A. Tarr, Pearson (2014).
4. Inorganic Chemistry, 6th edition. D.F. Shriver, M. Weller. T. Overton, J. Rourke and F. Armastrong, Oxford University Press (2014).
5. Inorganic Chemistry, 4th edition. C.E. Housecroft and A.G. Sharpe, Pearson Education Ltd. (2012).
6. Introduction to Modern Inorganic Chemistry, K.M. Mackay and R.A. Mackay, Blackie Publication (1989).
7. Concepts and Models of Inorganic Chemistry 3rd edition. B.E. Douglas, D.H. McDaniel and Alexander, Wiley (2001).
8. Ionic liquids-Classes and Properties (Ed) by Scott T. Handy, Intech Publisher (2011).
9. Lanthanide and Actinide Chemistry, Simon Cotton, John Wiley and Sons Ltd., (2006).
10. Supramolecular Chemistry, Peter J. Cragg, Springer (2010).

Course Articulation Matrix

POs COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	2	2	3	1	1
CO2	3	1	3	3	3	3	3	1	1
CO3	3	1	3	3	2	2	2	2	2
	3	1	3	2.67	2.33	2.33	2.67	1.33	1.33

CHO HCT: 1.2. STEREOCHEMISTRY AND REACTION MECHANISM

Objectives

- To understand detailed molecular structures of organic compounds.
- To learn bonding and chemical reactions of organic compounds.
- To study different chemical reactions involved in organic synthesis.

Course Outcome

- Optical and geometrical isomerism of Organic compounds. Application of stereochemistry in the study of regioselective and regiospecific reactions.
- The study of HMOT and its applications to simple organic molecules, and also understand the concept of aromaticity and methods of determining reaction mechanism.
- Nucleophilic, electrophilic and elimination reactions.

Pedagogy

- Molecular models are used to teach stereochemistry.
- Teaching through conventional method such as black board and chalk, and modern methods like power point presentation.

Course content

UNIT-I

[16 HOURS]

Stereoisomerism: Projection formulae [flywedge, Fischer, Newman and sawhorse], enantiomers, diastereoisomers, mesomers, racemic mixture and their resolution, configurational notations of simple molecules, DL and RS configurational notations.

Optical isomerism: Conditions for optical isomerism: Elements of symmetry-plane of symmetry, centre of symmetry, alternating axis of symmetry (rotation-reflection symmetry). Optical isomerism due to chiral centers and molecular dissymmetry, allenes and biphenyls, criteria for optical purity.

Geometrical isomerism: Due to C=C, C=N and N=N bonds, *E*, *Z* conventions, determination of configuration by physical and chemical methods. Geometrical isomerism in cyclic systems. **Conformational analysis**: Elementary account of conformational equilibria of ethane, butane and cyclohexane. Conformation of cyclic compounds such as cyclopentane, cyclohexane, cyclohexanones and decalins. Conformational analysis of 1,2-, 1,3- and 1,4-disubstituted cyclohexane derivatives and *D*-Glucose, Effect of conformation on the course and rate of reactions.

Stereoselectivity: Meaning and examples of stereospecific reactions, stereoselective reactions, diastereoselective reactions, regioselective, regiospecific reactions, enantioselective reactions and enantiospecific reactions.

UNIT-II

[16 HOURS]

Basics of organic reactions: Meaning and importance of reaction mechanism, classification and examples for each class.

Bonding in organic systems: Theories of bonding-molecular orbital approaches. Huckel molecular orbital theory and its application to simple π-systems: ethylene, allyl, cyclopropyl, cyclobutadienyl, cyclopentadienyl, cyclohexatrienyl systems. Calculation of the total π-energy, and M.O. coefficients of the systems.

Aromaticity: Concept of aromaticity, Huckel‘s rule, Polygon rule, annulenes, heteroannulenes and polycyclic systems.

Structure and reactivity: Brief discussion on effects of hydrogen bonding, resonance, inductive and hyperconjugation on strengths of acids and bases.

Methods of determining organic reaction mechanism: Thermodynamic and kinetic requirements for reactions, kinetic and thermodynamic control. Identification of products. Determination of reaction intermediates, isotope labeling and effects of cross over experiments. Kinetic and stereochemical evidence, solvent effect. Formation, structure, stability, detection and reactions of carbocations (classical and non-classical), carbanions, free radicals, carbenes, nitrenes, arynes and ylides (Sulphur, nitrogen and phosphorous).

UNIT-III

[16 HOURS]

Aliphatic Nuleophilic Substitution reactions: Kinetics, mechanism and stereochemical factor affecting the rate of S participation. , S 1 S 2 , Si , S 1 1 reactions, Neighbouring group

Electrophilic substitution reactions: Kinetics, mechanism and stereochemical factor affecting the rate of S_E1 & S_E2

Aromatic electrophilic substitution reactions: Mechanism of nitration, halogenation, sulphonation, Friedel-Crafts alkylation and acylation, Mannich reaction, chloromethylation, Vilsmeier Haack reaction, Diazonium coupling, Gattermann–Koch reaction, Mercuration reaction.

Aromatic nucleophilic substitution reactions: S reaction, von Richter reaction.1, S^2 and benzyne mechanism, Bucherer

Mechanism of Addition reactions: Addition to C=C multiple bonds involving electrophiles, nucleophiles. Markownikoff's rule and anti-Markownikoff's rule.

Additions to carbonyl compounds: Addition of water, alcohol, bisulphate, HCN and amino compounds. Hydrolysis of esters.

Elimination reactions: Mechanism and stereochemistry of eliminations - E_1, E_2, E_{1cB}. *cis* elimination, Hofmann and Saytzeff eliminations, competition between elimination and substitution reactions, decarboxylation reactions. Chugaev reaction.

References

1. Stereochemistry of carbon compounds, Ernest L. Eliel.
2. Stereochemistry: P. S. Kalsi.
3. Organic Chemistry, VI edition, Robert T. Morrison, Robert N. Boyd.
4. Organic Chemistry, Vol-I by I. L. Finar.
5. Advance Organic Chemistry, IV edition, Jerry March.
6. Advance Organic Chemistry, III edition, Part-A and Part-B, Francis A. Carey and Rechard J. Sundberg.
7. Organic Chemistry, III edition, V. K. Ahluwalia and Rakesh Kumar Parashar.
8. Reactive intermediates in Organic Chemistry, N. S. Isaacs.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	2	2	1	2	1
CO2	3	1	3	3	2	2	1	1	2
CO3	3	1	3	3	1	2	2	1	2
	3	1	3	2.67	1.67	2	1.33	1.33	1.67

CHP HCT: 1.3. BASIC PHYSICAL CHEMISTRY

Objectives

- To understand thermal properties of chemical compounds.
- To study the rate of chemical reactions including fast reactions and factors influencing the reaction rate.
- To understand the theory of electrochemistry in solution.

Course Outcome

- The completion of this course will enable the students to gain the knowledge on fundamentals and theoretical background on the concepts of chemical thermodynamics, chemical kinetics and electrochemistry of solutions.
- This helps in understanding the stability and energetics of reaction.

Pedagogy

- Teaching through conventional method such as black board and chalk, and modern methods like power point presentation.
- To teach electrochemical aspects through animations.

Course content

UNIT-I

[16 HOURS]

Chemical Thermodynamics: Entropy: Physical significance, entropy changes in an ideal gas. Variation of entropy with temperature, pressure and volume. Entropy changes in reversible and irreversible processes.

Free energy: Helmholtz and Gibbs free energies, Gibbs-Helmholtz equation and its applications, Maxwell‘s relations and its applications. Nernst heat theorem: its consequences and applications. Third law of thermodynamics: statements, applications and comparison with Nernst heat theorem.

Partial molar properties: Physical significance, determination of partial molar volumes by intercept method and from density measurements. Chemical potential and its significance. Variation of chemical potential with temperature and pressure. Formulation of the Gibbs – Duhem equation. Derivation of Duhem-Margules equation.

Fugacity: Relation between fugacity and pressure, variation of fugacity with temperature and pressure. Determination of fugacity of gases.

Activity and activity coefficient: Variation of activity with temperature and pressure. Determination of activity co-efficient by depression in freezing point and solubility measurements by electrical methods.

Thermodynamics of dilute solutions: Raoult‘s law, Henry‘s law. Ideal and non-ideal solutions.

UNIT-II

[16 HOURS]

Chemical Kinetics: Complex reactions: Kinetics of parallel, consecutive and reversible reactions. Chain reactions: Branched chain reactions, general rate expression, Auto catalytic reactions (Hydrogen-Oxygen reaction), oscillatory reactions and explosion limits.

Theories of reaction rates: Collision theory and its limitations, Activated complex theory (postulates -derivation) and its applications to reactions in solution. Energy of activation, other activation parameters - determinations and their significance. Lindemann theory, Hinshelwood‘s theory of unimolecular reactions.

Reactions in solution: Ionic reactions - salt effects, effect of dielectric constant (single sphere models). Effect of pressure, volume and entropy change on the rates of reactions. Cage effect with an example.

Fast reactions- Introduction, study of fast reactions by continuous and stopped flow techniques, relaxation methods (T-jump and P-jump methods), flash photolysis, pulse and shock tube methods.

UNIT-III

[16 HOURS]

Electrochemistry of solutions: Factor effecting electrolytic conductance. Debye-Huckel theory

- Concept of ionic atmosphere. Debye-Huckel-Onsager equation of conductivity and its validity. Debye-Huckel limiting law (DHL), its modification for appreciable concentrations. A brief survey of Helmholtz-Perrin, Guoy-Chapman and Stern electrical double layer (no derivation). Transference number: True and apparent transference numbers, Abnormal transference numbers, effect of temperature on transference numbers. Liquid junction potential-determination and minimization.

Energetics of cell reactions: Effect of temperature, pressure and concentration on energetics of cell reactions (calculation of ΔG, ΔH and ΔS).

Irreversible electrode process: Introduction, reversible and irreversible electrodes, reversible and irreversible cells. Polarization, over voltage - concentration over voltage, activation over voltage and ohmic over voltage. Experimental determination of over voltage. Equations for concentration over potential, stationary and non-stationary surface. Butler-Volmer equation, Tafel equation. Hydrogen oxygen over voltage. Effect of temperature, current density and *p*H on over voltage.

References

1. Thermodynamics for Chemists by S. Glasstone, Affiliated East-West Press, New Delhi, (1965).
2. Physical Chemistry by P.W. Atkins, ELBS, 5th edition, Oxford University Press (1995).
3. Text Book of Physical Chemistry by Samuel Glasstone, MacMillan Indian Ltd., 2nd edition (1974).
4. Elements of Physical Chemistry by Lewis and Glasstone, 2nd Edn. Macmillan & Co Ltd., New York.
5. Chemical Kinetics by K.J. Laidler, Tata McGraw-Hill Pub, Co Ltd, New Delhi.
6. Chemical Kinetics by Frost and Pearson.
7. Kinetics and Mechanism of Chemical Transformation by J. Rajaram and J.C. Kuriacose, Macmillan, New Delhi.
8. Chemical Kinetics by L.K. Jain.
9. Introduction to Electrochemistry by S. Glasstone, Affiliated East-West Press, New Delhi,
10. Electrochemistry –Principles and Applications by E.G. Potter, Cleaver-Hume press Ltd, London.
11. Modern Electrochemistry Vol. I and II by J.O.M. Bockris and A.K.N. Reddy, Pentium Press, New York (1970).

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	3	3	3	2	2
CO2	3	1	3	2	2	3	3	2	2
	3	1	3	2	2.5	3	3	2	2

CHA HCT: 1.4. ANALYTICAL DATA ASSESSMENT AND SEPARATION TECHNIQUES

Objectives:

- To familiarize statistical methods to validate analytical methods.
- To learn sampling techniques and conventional volumetric methods.

Course outcome:

- To enhance the skills on sampling, purification, characterizations and data analysis using instrumental techniques.
- Build a foundation of chemical principles for understanding the chemical constituents in samples.
- To understand the basic Principle of Instrumentation and analytical applications.

Pedagogy:

- Teaching through conventional method such as black board and chalk, and modern methods like power point presentation.
- To evaluate validation parameters, MS-Office tools *viz.,* MS-Excel sheets can be used.

Course content

UNIT-I

[16 HOURS]

Analytical chemistry: Its functions and applications; analytical problems and procedures, analytical techniques and methods, method validation.

Calibration and standards: Calibration, chemical standard and reference material.

Quality in analytical laboratories: quality control, quality assurance and accreditation system. **Errors in analytical measurements:** measurement errors, absolute and relative errors, determinate and indeterminate errors and accumulated errors-sources, effects on results and control.

Assessment of accuracy and precision: Accuracy and precision, standard deviation, relative standard deviation, pooled standard deviation, variance, overall precision, and confidence interval.

Significance testing: Significance tests- Outlier, Q-test, F-test, t-test, and analysis of variance (ANOVA). Significant numbers.

Calibration and linear regression: Calibration, linear regression, standard addition, internal standardisation, internal normalization, external standardisation.

Figures of merit of Analytical methods: sensitivity and detection limit, linear dynamic range. **Quality control and chemometrics:** Control charts, collaborative testing and multivariate statistics.

UNIT-II

[16 HOURS]

Principles of chromatography- Chromatographic separations and classification of principal chromatographic separations. Chromatographic mechanisms-sorption isotherms; adsorption systems-stationary and mobile phases, partition systems-stationary and mobile phases. Characterization of solutes-distribution ratio, retention factor, retention time and retardation factor.

Sorption processes- adsorption, partition, ion- exchange and size exclusion.

Chromatographic performance- Efficiency and resolution. Peak asymmetry- kinetic and temperature effects. Isolation of separated components.

Quantitative and qualitative analyses.

Thin layer chromatography (TLC) - Principles and procedures, stationary and mobile phases, solute- detection, alternative TLC procedures and applications of TLC.

Gas chromatography (GC) - Principles and types. Mobile phases, Sample injections, columns and stationary phases. Temperature control and solute detection; thermal conductivity detector (TCD), flame ionization detector (FID), nitrogen-phosphorus detector (NPD) and electron capture detector (ECD). Instrument control and data processing. GC-procedures- temperature programming and special procedures used in GC. Quantitative and qualitative analyses.

High performance liquid chromatography(HPLC): Principles, mobile phases, solvent delivery systems, sample injection system, column and stationary phases. Solute detection - UV- visible, fluorescence, refractive index and electrochemical detectors. Instrument control and data processing. Modes of HPLC. Optimisation of separations, qualitative and quantitative analyses.

UNIT-III

[16 HOURS]

Ion-exchange chromatography (IEC): Principles, apparatus and instrumentation, and applications.

Size-exclusion chromatography (SEC): Principles, apparatus and instrumentation, and applications.

Affinity chromatography (AFC): Principles, methodology and applications.

Supercritical fluid chromatography (SFC): Properties of supercritical fluids, instrumentation and operating variables, comparison of SFC with other chromatographic techniques, applications.

Supercritical fluid extraction (SFE): Advantages, instrumentation, choice of supercritical fluids, off-line and on-line extraction, applications.

Electrophoresis (EP) and electrochromatography(EC): Principles- high performance capillary electrophoresis and capillary electrochromatography, running buffers, supporting medium, sample injection, solutes- detection, instrument control and data processing. Modes of EP and EC- capillary zone electrophoresis (CZE), micellar electrokineticchromatography (MEKC), capillary gel electrophoresis (CZE), capillary isoelectric focusing (CIEF). Capillary electrochromatography (CEC), features, basis of separations. Qualitative analysis by CE and CEC and applications.

Solvent and solid phase extraction: Extraction techniques, extraction efficiency and selectivity. Solvent extraction (SE) - Extraction of organic acids and bases, extraction of metals. Methods of extraction and applications. Solvent phase sorbents, solid phase extraction (SPE) formats. Automated solid phase extraction. Solid phase micro extraction (SPME). Applications of SPE and SPME.

References

1. Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch, 8th edition,
   2005, Saunders College Publishing, New York.
2. Analytical Chemistry, G.D. Christian, 5th edition, 2001, John Wiley & Sons, Inc, India.
3. Quantitative Analysis, R.A. Day and A.L. Underwood, 6th edition, 1993, Prentice Hall, Inc. New Delhi.
4. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D. Barnes
   and M.J.K. Thomas, 6th edition, Third Indian Reprint, 2003, Pearson Education Pvt. Ltd., New
   Delhi.
5. Quantitative Analysis, R.A. Day and A.L. Underwood, 6th edition, 1993 prenticeHall, Inc. New Delhi.
6. Analytical Chemistry Principles, John H. Kennedy, 2nd edition, Saunders CollegePublishing,
   California, 1990.
7. Principles and Practice of Analytical Chemistry, F.W. Fifield and Kealey, 3rd edition, 2000, Blackwell Sci., Ltd. Malden, USA.
8. Modern Analytical Chemistry, David Harvey, McGraw Hill, New Delhi, 2000.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	3	1	1	1	2
CO2	3	1	3	2	3	2	2	1	1
CO3	3	2	3	2	1	2	1	1	2
Avg.	3	1.33	3	2	2.33	1.67	1.33	1	1.67

SOFT CORE PRACTICALS

CHA SCP: 1.1/2.1. ANALYTICAL CHEMISTRY PRACTICALS-I

[128 HOURS]

Course Objective

- To understand basic concepts by carrying out analytical experiments.
- The experimental results are subjected to validation of analytical parameters

Course Outcomes

After studying this course the student to:

- Analyze various samples with different classical and simple instrumental skills.
- Obtain knowledge for selection of analytical methods with suitable technique being adopted for the analysis different samples like, water, laboratory chemicals and reagents, body fluids such as urine etc.
- Distinguish classical and instrumental methods.
- Propose and conduct experiment for quantification of individual analytes

Pedagogy

- Computer aided applications for the evaluation of experimental results.
- Each student performs experiments as per the protocol in practical classes.

Course experiments
Part-A

1. Determination of total acidity of vinegar and wines by acid-base titration.
2. Determination of purity of a commercial boric acid sample, and Na_2CO_3 content of washing soda.
3. Analysis of chromate-dichromate mixture by acid-base titration.
4. Determination of replaceable hydrogen and relative molecular mass of a weak organic acid by titration with NaOH.
5. Determination of ephedrine and aspirin in their tablet preparations by residual acid-base titrimetry.
6. Determination of purity of aniline and assay of chlorpromazine tablets by non-aqueous acid-base titration.
7. Periodate determination of ethylene glycol and glycerol (Malprade reaction).
8. Determination of carbonate and bicarbonate in a mixture by *p*H-metric titration and comparison with visual acid-base titration.
9. Determination of purity of a commercial sample of mercuric oxide by acid-base titration.
10. Determination of benzoic acid in food products by titration with methanolic KOH in chloroform medium using thymol blue as indicator.
11. Determination of the *p*H of hair shampoos and *p*H determination of an unknown soda ash.
12. Analysis of water/waste water for acidity by visual, *p*H metric and conductometric titrations.
13. Analysis of water/waste water for alkalinity by visual, *p*H metric and conductometric titrations.
14. Determination of carbonate and hydroxide-analysis of a commercial washing soda by visual and *p*H-titrimetry.
15. Determination of ammonia in house-hold cleaners by visual and conductometric titration.

16. Potentiometric determination of the equivalent weight and Ka for a pure unknown weak acid.
17. Spectrophotometric determination of creatinine and phosphorus in urine.
18. Flame emission spectrometric determination of sodium and potassium in river/lake water.
19. Spectrophotometric determination of *p*Ka of an acid-base indicator.

PART-B

1. Determination of percentage of chloride in a sample by precipitation titration-Mohr, Volhard and Fajan's methods.
2. Determination of silver in an alloy and Na_2CO_3 in soda ash by Volhard method.
3. Mercurimetric determination of blood or urinary chloride.
4. Determination of total hardness, calcium and magnesium hardness and carbonate and bicarbonate hardness of water by complexation titration using EDTA.
5. Determination of calcium in calcium gluconate/calcium carbonate tablets/injections and of calcium in milk powder by EDTA titration.
6. Analysis of commercial hypochlorite and peroxide solution by iodometric titration.
7. Determination of copper in an ore/an alloy by iodometry and tin in stibnite by iodimetry.
8. Determination of ascorbic acid in vitamin C tablets by titrations with $KBrO_3$ and of vitamin C in citrus fruit juice by iodimetric titration.
9. Determination of iron in razor blade by visual and potentiometric titration using sodium metavanadate.
10. Determination of iron in pharmaceuticals by visual and potentiometric titration using cerium(IV) sulphate.
11. Determination of nickel in steel by synergic extraction and boron in river water/sewage using ferroin.
12. Determination of total cation concentration of tap water by ion-exchange chromatography.
13. Determination of magnesium in milk of magnesium tablets by ion-exchange chromatography.
14. Cation exchange chromatographic separation of cadmium and zinc and their estimation by EDTA titration.
15. Gas chromatographic determination of ethanol in beverages.
16. Determination of aspirin, phenacetin and caffeine in a mixture by HPLC.
17. Solvent extraction of zinc and its spectrophotometric determination.
18. Anion exchange chromatographic separation of zinc and magnesium followed by EDTA titration of the metals.
19. Separation and determination of chloride and bromide on an anion exchanger.
20. Thin layer chromatographic separation of amino acids.

References

1. Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch 8th edition, 2005, Saunders College Publishing, New York.
2. Analytical Chemistry, G.D. Christian, 5th edition, 2001 John Wiley & Sons, Inc, India.
3. Quantitative Analysis, R.A. Day and A.L. Underwood, 6th edition, 1993, Prentice Hall, Inc. New Delhi.
4. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D. Barnes and M.J.K. Thomas, 6th edition, Third Indian Reprint, 2003, Pearson Education Pvt. Ltd., New Delhi.
5. Analytical Chemistry Principles, John H. Kennedy, 2nd edition, Saunders College Publishing, California, 1990.
6. Practical Clinical biochemistry methods and interpretations, R. Chawla, J.P. Bothers Medical Publishers (P) Ltd., 1995.
7. Laboratory manual in biochemistry, J. Jayaraman, New Age International Publishers, New Delhi, 1981.
8. Practical Clinical Biochemistry by Harold Varley and Arnold.Heinmann, 4th edition.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	2	2	3	2	1	3	2
CO2	3	3	2	2	3	3	2	3	2
CO3	3	3	2	2	2	3	2	3	3
CO4	3	3	2	2	3	3	3	3	2
Avg	3	3	2	2	2.75	2.75	2	3	3

CHI SCP: 1.2/2.2. INORGANIC CHEMISTRY PRACTICALS-I

Objectives:

[128 HOURS]

- To understand basic concepts by carrying out different experiments.
- To develop the skill for the qualitative and quantitative analysis of various samples.

Course outcome:

- Determination of various analytes presents in different ore samples by volumetric, gravimetric and spectrophotometric methods.
- The chemistry of redox, complexometric and indirect methods
- The principle in the semi-micro analysis of an inorganic salt mixture

Pedagogy:

- Each student performs experiments as per the protocol in practical classes.
- Handling the instrument and pyrolysis for quantitative determination of analyte.

Course experiments

PART – A

1. Determination of iron in haematite using cerium (IV) solution (0.02M) as the titrant, and gravimetric estimation of insoluble residue.
2. Estimation of calcium and magnesium carbonates in dolomite using EDTA titration, and gravimetric analysis of insoluble residue.
3. Determination of manganese dioxide in pyrolusite using permanganate titration.
4. Quantitative analysis of copper-nickel in alloy/mixture:
   a) Copper volumetrically using KIO3.
   b) Nickel gravimetrically using DMG
5. Determination of lead and tin in a mixture: Analysis of solder using EDTA titration.
6. Quantitative analysis of chloride and iodide in a mixture:
   a) Iodide volumetrically using KIO3
   b) Total halide gravimetrically
7. Gravimetric analysis of molybdenum with 8-hydroxyquinoline.
8. Quantitative analysis of copper(II) and iron(II) in a mixture:
   a) Copper gravimetrically as CuSCN and
   b) Iron volumetrically using cerium(IV) solution
9. Spectrophotometric determinations of:
   a) Titanium using hydrogen peroxide
   b) Chromium using diphenyl carbazide in industrial effluents
   c) Iron using thiocyanate/1,10-phenanthroline method in commercial samples
   d) Nickel using dimethylglyoxime in steel solution
10. Micro-titrimetric estimation of :
    a) Iron using cerium(IV)
    b) Calcium and magnesium using EDTA
11. Quantitative estimation of copper (II), calcium (II) and chloride in a mixture.
12. Circular paper chromatographic separation of: (Demonstration)
    a) Iron and nickel
    b) Copper and nickel

PART – B

Semimicro qualitative analysis of inorganic mixtures containing **TWO** anions and **TWO** cations (excluding sodium, potassium and ammonium cations) and **ONE** of the following less common cations: W, Mo, Ce, Ti, Zr, V and Li.

References

1. Vogel‘s Text Book of Quantitative Chemical Analysis – 5th edition, J. Basset, R.C. Denney, G.H. Jeffery and J. Mendhom.
2. A Text Book of Quantitative Inorganic Analysis by A.I. Vogel, 3rd edition.
3. Spectrophotometric Determination of Elements by Z. Marczenko.
4. Vogel‘s Qualitative Inorganic Analysis – Svelha.
5. Macro and SemimicroInorganicQualitative Analysis by A.I. Vogel.
6. Semimicro Qualitative Analysis by F.J. Welcher and R.B. Halin.
7. Quantitative Chemical Analysis by Daniel C. Harris, 7th edition, (2006).

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3

CHO SCP: 1.3/2.3. ORGANIC CHEMISTRY PRACTICALS-I

[128 HOURS]

Objectives:

- To understand synthetic methods by carrying out different experiments.
- To develop the skill for the separation and qualitative analysis of binary mixtures of organic compounds.

Course outcome:

- Students are involved in the multi-step synthesis of different organic compounds.
- Understand the qualitative analysis of binary mixture of organic compounds through separation, identification of functional groups and preparation of solid derivatives.

Pedagogy:

- Each student performs experiments as per the protocol in practical classes.
- Experimental setup for the synthesis of organic compounds by every individual.

Course experiments

PART-A

Multistep synthesis

1. Preparation *p*-bromoaniline from acetanilide**.**
2. Preparation of *n*-nitroaniline from acetalinide.
3. Oxidation of cyclohexanol to adipic acid.
4. Esterification: Preparation of benzoccaine from *p*-nitrotoluene.
5. Diazotization (Sandmeyer‘s reaction): Preparation of *p*-chlorobenzoic acid from *p*- toluidine.
6. Preparation benzilic acid from benzoin**.**
7. Preparation of *o*-hydroxy benzophenone from phenyl benzoate *via* Fries rearrangement.
8. Preparation of benzanilide from benzophenone oxime *via* Beckmann rearrangement.
9. Preparation of benzoic acid from benzaldehyde (Cannizzaro Reaction).
10. Preparation of 2,4-dinitrophenylhydrazine from 2,4-dinitrochlorobenzene.
11. Preparation of *m*-nitrobenzoic acid from methylbenzoate.
12. Preparation of chalcone.

PART-B

Qualitative analysis: Separation of binary mixtures, identification of functional groups and preparation of suitable solid derivatives.

References:

1. Vogel' text book of practical organic chemistry, V edition, B. S. Furniss, A. J. Hannaford, P. W. G. Smith, A. R. Tatehell.
2. Elementary practical organic chemistry, Part-I: Small scale preparations, Part-II: Qualitative organic analysis, By Arthur I, Vogel.
3. Hand book of organic analysis, H. T. Clarke and Norman Collie.
4. Experiments in Organic Chemistry, Louis F. Fieser.
5. Laboratory manual of Organic Chemistry by B. B. Dey and M. V. Sitaraman.
6. Practical Organic Chemistry by Mann F. G. and Saunders.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	2	3	1	2	2	3	1
CO2	3	3	3	1	1	3	3	3	2
Avg	3	3	2.5	2	1	2.5	2.5	3	1.5

CHP SCP: 1.4/2.4. PHYSICAL CHEMISTRY PRACTICALS-I

[128 HOURS]

Objectives:

- To understand the rate of chemical reactions and factors influencing the reaction rate by carrying out kinetic experiments.
- To understand basic concepts of electrochemistry by carrying out experiments.

Course outcome:

- After the completion of this course, the students can able to develop the experimental skill and theoretical interpretation of experimental results of many physical chemistry experiments of chemical kinetics in solution phase, thermodynamics, electrochemistry and spectrophotometry.
- This helps in academics, research and industries.

Pedagogy:

- Each student performs experiments as per the protocol in practical classes.
- To optimize the reaction conditions for understanding the rate of chemical reactions.

Course experiments

PART - A

1. Study of kinetics of hydrolysis of methyl acetate in presence of two different concentrations of HCl/H_2SO_4 and report the relative catalytic strength.
2. Study of kinetics of reaction between $K_2S_2O_8$ and KI, first order, determination of rate constants at two different temperatures and E_a.
3. To study the kinetics of saponification of ethyl acetate by conductivity method at two different concentrations of NaOH and report the relative catalytic strength.
4. Determination of partial molar volume of salt-water system ($NaCl-H_2O/KCl-H_2O/KNO_3-H_2O$) systems.
5. To study the kinetics of reaction between acetone and iodine - determination of order of reaction with respect to iodine and acetone.
6. Study the kinetics of decomposition of diacetone alcohol by NaOH, determine the catalytic coefficient of the reaction and comparison of strength of alkali.
7. Determination of energy of activation for the bromide-bromate reaction.
8. Kinetics of reaction between sodium formate and iodine and determination of energy of activation.
9. Determination of heat of solution of organic acid (benzoic acid/salicylic acid) by variable temperature method (graphical method).
10. Determination of degree of association of benzoic acid in benzene by distribution method.
11. To determine the eutectic point of a two component system (Naphthalene-*m*- dinitrobenzene system).
12. Analysis of a binary mixture (Gylcerol & Water) by measurement of refractive index.
13. Determination of the molecular weight of a polymer material by viscosity measurements (cellulose acetate/methyl acrylate).

PART – B

1. Conductometric titration of a mixture of HCl and CH_3COOH against NaOH.
2. Conductometric titration of sodium sulphate against barium chloride.
3. pH titration of (a) HCl against NaOH (b) Copper sulphate against NaOH and (c) $CH_3COOH/HCOOH$ against NaOH - determination of K_a.
4. Determination of equivalent conductance of weak electrolyte (CH_3COOH) at infinite dilution following Kohlrausch law.
5. Determination of dissociation constant and mean ionic activity coefficient of weak acids ($CH_3COOH/HCOOH/ClCH_2COOH$) by conductivity method.
6. Potentiometric titration of KI *vs* $KMnO_4$ solution.
7. Determination of dissociation constant of a weak acid ($CH_3COOH/HCOOH/ClCH_2COOH$) by potentiometric method.
8. Potentiometric titration of a mixture of halides ($KCl+KI/KCl+KBr/KBr+KI$) against $AgNO_3$.
9. To obtain the absorption spectra of coloured complexes, verification of Beer's law and estimation of metal ions in solution using a spectrophotometer.
10. Potentiometric titration of $K_2Cr_2O_7$ against FAS determination of redox potential and concentration of Fe^{2+} ions.
11. Conductometric titration of oxalic acid against NaOH and NH_4OH.
12. Coulometric titration I_2 vs $Na_2S_2O_3$.
13. Determination of acidic and basic dissociation constant and isoelectric point of an amino acid by pH metric method.
14. Kinetics of photodegradation of indigocarmine (IC) using ZnO/TiO_2 as photocatalyst and study the effect of [ZnO/TiO_2] and [IC] on the rate of photodegradation.

References:

1. Practical Physical Chemistry – A.J. Findlay.
2. Experimental Physical Chemistry – F. Daniels *et al*.
3. Selected Experiments in Physical Chemistry – Latham.
4. Experiments in Physical Chemistry – James and Prichard.
5. Experiments in Physical Chemistry – Shoemaker.
6. Advanced Physico-Chemical Experiments – J. Rose.
7. Practical Physical Chemistry – S.R. Palit.
8. Experiments in Physical Chemistry – Yadav, Geol Publishing House.
9. Experiments in Physical Chemistry – Palmer.
10. Experiments in Chemistry – D.V. Jahagirdar, Himalaya Publishing House, Bombay, (1994).
11. Experimental Physical Chemistry – R.C. Das and B. Behera, Tata Mc Graw Hill.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	2	1	3	1	1	3	3
CO2	3	3	2	3	1	1	2	3	3
Avg.	3	3	2	2	2	1	1.5	3	3

SOFT CORE PAPERS

CHA SCT: 1.1/2.1. TITRIMETRIC ANALYSIS

Objective:

- To familiarize statistical methods to validate analytical methods.
- To learn sampling techniques and conventional volumetric methods.

Course Outcome:

After studying this course the student able to:

- Understand on quantitative and qualitative methods of analysis with relevant equilibrium chemistry.
- Develop the ideas with the fundamental aspects in analytical chemistry.
- Build the interest in students in developing good experimental protocols, and in interpreting experimental results.
- Gain analytical knowledge for the quantitative analysis of various samples of different origin under titrimetric aspects.
- Learn statistical aspects from which the spirit of assessing the results will be enhanced.
- Learn method development and validation features so that they will become outstanding basement for their career in various industries.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Titrimetric analysis: An overview of titrimetry. Principles of titrimetric analysis. Titration curves. Titrations based on acid-base reactions - titration curves for strong acid and strong base, weak acid and strong base and weak base and strong acid titrations. Selecting and evaluating the end point. Finding the end point by visual indicators, monitoring *p*H and temperature.

Quantitative applications – selecting and standardizing a titrant, inorganic analysis - alkalinity, acidity and free CO_2 in water and waste waters, nitrogen, sulphur ammonium salts, nitrates and nitrites, carbonates and bicarbonates. Organic analysis - functional groups like carboxylic acid, sulphonic acid, amine, ester, hydroxyl, carbonyl. Air pollutants like SO_2. Quantitative calculations. Characterization applications - equivalent weights and equilibrium constants.

Acid-base titrations in non-aqueous media: Role of solvent in acid-base titrations, solvent systems, differentiating ability of a solvent, some selected solvents, titrants and standards, titration curves, effect of water, determining the equivalence point, typical applications - determination of carboxylic acids, phenols and amines.

UNIT-II

[16 HOURS]

Precipitation titrations: Titration curves, feasibility of precipitation titrations, factors affecting shape - titrant and analyte concentration, completeness of the reaction, titrants and standards, indicators for precipitation titrations involving silver nitrate, Volhard, Mohr and Fajan‘s methods, typical applications.

Complexometric titrations: Complex formation reactions, stability of complexes, stepwise formation constants, chelating agents, EDTA - acidic properties, complexes with metal ions, equilibrium calculations involving EDTA, conditional formation constants, derivation of EDTA titration curves, effect of other complexing agents, factors affecting the shape of titration curves - completeness of reaction, indicators for EDTA titrations - theory of common indicators, titration methods employing EDTA - direct, back and displacement titrations, indirect determinations, titration of mixtures.

Redox titrations: Balancing redox equations, calculation of the equilibrium constant of redox reactions, calculating titration curves, detection of end point, visual indicators and potentiometric end point detection. Quantitative applications-adjusting the analyte‘s oxidation state, selecting and standardizing a titrant. Inorganic analysis- chlorine residuals, dissolved oxygen in water, water in non-aqueous solvents. Organic analysis-chemical oxygen demand (COD) in natural and waste waters, titrations of mercaptans and ascorbic acid with I_3^- and titration of organic compounds using periodate.

References

1. Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch, 8th edition, 2005, Saunders College Publishing, New York.
2. Analytical Chemistry, G.D. Christian, 5th edition, 2001, John Wiley & Sons, Inc, India.
3. Quantitative Analysis, R.A. Day and A.L. Underwood, 6th edition, 1993, Prentice Hall, Inc. New Delhi.
4. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D. Barnes and M.J.K. Thomas, 6th edition, Third Indian Reprint, 2003, Pearson Education Pvt. Ltd., New Delhi.
5. Quantitative Analysis, R.A. Day and A.L. Underwood, 6th edition, 1993 prenticeHall, Inc. New Delhi.
6. Analytical Chemistry Principles, John H. Kennedy, 2nd edition, Saunders College Publishing, California, 1990.
7. Principles and Practice of Analytical Chemistry, F.W. Fifield and Kealey, 3rd edition, 2000, Blackwell Sci., Ltd. Malden, USA.
8. Modern Analytical Chemistry, David Harvey, McGraw Hill, New Delhi, 2000.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	1	1	1	2	2	1	2
CO2	3	1	2	1	1	2	2	1	3
CO3	3	1	2	1	2	2	1	1	2
CO4	1	1	1	1	2	2	1	1	1
CO5	3	1	3	2	1	2	2	1	2
CO6	3	1	3	2	1	2	1	1	1
Avg.	2.66	1	2	1.33	1.33	2	1.5	1	1.83

CHI SCT: 1.2/2.2. CHEMISTRY OF SELECTED ELEMENTS

Objectives:

- To learn basic chemistry of some selected group elements from periodic table.
- To understand properties of metal-metal bonding and cluster compounds.

Course outcome:

- Understand the chemistry of hydrogen and group 2 elements.
- The chemistry of pseudohalogens, interhalogens and their halogen compounds.
- The chemistry of xenon and other noble gas compounds.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.Course content

UNIT-I

[16 HOURS]

Compounds of hydrogen: The hydrogen and hydride ions, Dihydrogen and hydrogen bonding. Classes of binary hydrides: Molecular hydrides, saline hydrides and metallic hydrides.
The Group 1 elements: Occurrence, extraction and uses. Simple compounds: Hydrides, halides, oxides, hydroxides, oxoacids, nitrides, solubility and hydration and solutions in liquid ammonia. Coordination and organometallic compounds. Applications.
The Group 2 elements: Occurrence, extraction and uses. General properties. Halides, hydrides and salts of oxo acids. Complex ion in aqueous solution and complexes with amido and alkoxy ligands.
The Group 15 elements: Introduction, oxides and oxoacids of nitrogen and phosphorus.

UNIT-II

[16 HOURS]

The Group 17 elements: Occurrence, recovery and uses. Trends in properties and pseudohalogens.
Interhalogens: Physical properties and structures, chemical properties, cationic interhalogens.
Compounds with oxygen: Halogen oxides, oxoacids and oxoanions**.** Trends in rates of redox reactions and redox properties of individual oxidation states**.**
Chemistry of astatine.
The Group 18 elements: Occurrence, recovery and uses. Synthesis and structure of xenon fluorides, Reaction of xenon fluorides, xenon-oxygen compounds, Organoxenon compounds, other compounds of noble gases.
M-M bonds: Multiple metal-metal bonds.
Cluster compounds: carbonyl and carbide clusters.
References

1. Basic Inorganic Chemistry – 3rd edition. F.A. Cotton, G. Wilkinson and P.L. Gaus, John
2. Wiley and Sons (2002).
3. Inorganic Chemistry, 3rd edition. James E. Huheey, Harper and Row Publishers (1983).
4. Inorganic Chemistry, 3rd edition. G.L. Miessler and D.A. Tarr, Pearson Education (2004).
5. Inorganic Chemistry, 4th edition. C.E. Housecroft and A.G. Sharpe, Pearson Education Ltd. (2012).
6. Chemistry of the Elements – N.N. Greenwood and A. Earnshaw, Pergamon Press (1985).
7. Inorganic Chemistry, 6th edition. D.F. Shriver, M. Weller. T. Overton, J. Rourke and F.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	1	2	1	2	2
CO2	2	1	3	2	1	2	1	2	1
CO3	2	2	2	1	1	2	1	2	1
Avg	2.33	1.33	2.67	1.67	1	2	1	2	1.33

CHO SCT: 1.3/2.3. CHEMISTRY OF NATURAL PRODUCTS-I

Objectives:

- To learn the nomenclature, classification, purification, structure and synthesis of some natural products.
- To understand the biological functions of biomolecules.

Course outcome:

- Acquire the knowledge of chemistry of lipids, prostaglandins and terpenoids.
- Understand the biological importance of chlorophyll and porphyrins.
- Chemistry of flavonoids and isoflavonoids.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern method like power point presentation is used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Lipids: Nomenclature, classification, purification, structure and synthesis of fatty acids, phospholipids, sphingolipids. Biological importance of lipids (Lecithin, sphingolipids, oils and fats).
Prostaglandins: Introduction, classification and biological importance of PG's. Constitution of PGE1. Synthesis of PGE & F series.
Terpenoids: Introduction, classification and general methods of structural elucidation. Chemistry of pinene, camphor, caryophyllene, santonin. Biosynthesis of terpenoids.

UNIT-II

[16 HOURS]

Porphyrins: Introduction, structure and biological functions of haemin. Vitamin B12: structure and as coenzyme in molecular rearrangement reactions; Chlorophyll: structure and biological importance.
Flavonoids and Isoflavonoids: Occurrence, nomenclature and general methods of structure determination. Isolation and synthesis of Apigenin, Luteolin, Kaempferol, Quercetin, wedelolactone, Butein, Daidzein. Biosynthesis of flavonoids and isoflavonoids: Acetate Pathway and Shikimic acid Pathway. Biological importance of flavonoids and isoflavonoid

References

1. Organic Chemistry, VI edition, Robert T. Morrison, Robert N. Boyd.
2. Organic Chemistry, Vol-II by I. L. Finar.
3. Schaum's outline of theory and problems of Organic Chemistry, Harbert Meislich, Howard Nechamkin and Jocob Sharefkin.
4. Natural products: Their chemistry and biological significance, J. Mann, R. S. Davidson, J. B. Banthorpe and J. B. Harborne.
5. Synthetic drugs, Gurdeep R. Chatwal.
6. Heterocyclic chemistry by Achison.
7. Heterocyclic chemistry by Smith and Joule.
8. Heterocyclic chemistry by Pacquete.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	1	2	1	1	1	3	2	1
CO2	3	1	1	2	2	1	3	2	2
CO3	1	1	2	2	1	1	3	2	1
Avg	2	1	1.67	1.67	1.33	1	3	2	1.33

CHP SCT: 1.4/2.4. BIOPHYSICAL CHEMISTRY

Objectives:

- To understand the physico-chemical principles of biological fluids.
- To learn the pharmacokinetics, pharmacodynamics, toxicokinetics of biological systems.

Course outcome:

- After the completion of this course, the students gain the knowledge on theory and principles of biophysical chemistry and pharmacokinetics.
- This course helps to understanding the bio-availability and different pharmacokinetic parameters of drugs in the living system.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Biophysical Chemistry: Electrophoresis - Principles of free electrophoresis, zone electrophoresis, gel electrophoresis and its applications in qualitative and quantitative study of proteins. Determination of isoelectric point of a protein. Electro-osmosis and streaming potential and its biological significance. Biological significance of Donnan membrane phenomenon. Micelles and its involvement during digestion and absorption of dietary lipids. Diffusion of solutes across bio-membranes and its application in the mechanism of respiratory exchange.
–Salting In‖ and –Salting Out‖ of proteins. Osmotic behaviour of cells and osmo-regulation and its application in the evolution of excretory systems of organisms. Effect of temperature and *p*H on the viscosity of bio-molecules (albumin solution). Significance of viscosity in biological systems - mechanism of muscle contraction, polymerization of DNA and nature of blood flow through different vessels. Effect of temperature, solute concentration (amino acids) on surface tension. Biological significance of surface tension - stability of Alveoli in lungs, interfacial tension in living cells (Danielli and Davson model). Application of sedimentation velocity and sedimentation equilibrium method for molecular weight determination of proteins.

UNIT-II

[16 HOURS]

Pharmacokinetics: Introduction, biopharmaceutics, pharmacokinetics, clinical pharmacokinetics, pharmacodynamics, toxicokinetics and clinical toxicology. Measurement of drug concentration in blood, plasma or serum. Plasma level-time curve, significance of measuring plasma drug concentrations.

One compartment open model: Intravenous route of administration of drug, elimination rate constant, apparent volume of distribution and significance. Calculation of elimination rate constant from urinary excretion data, clinical application.

Two compartment model: Plasma level-time curve, relationship between tissue and plasma drug concentrations, Apparent volumes of distribution. Drug clearance, clinical example. Plasma level-time curve for a three compartment open model.

Drug absorption: Factors affecting the rate of drug absorption - nature of the cell membrane, Route of drug administration - Oral drug absorption, Intravenous infusion and intravenous solutions, Effect of food on gastrointestinal drug absorption rate.

References

1. Introduction to Physical Organic Chemistry, R.D. Gilliom, Madison – Wesley, USA (1970).
2. Physical Organic Chemistry- Reaction Rate and Equilibrium Mechanism – L.P. Hammett, McGraw HillBook, Co., (1970).
3. Biophysical Chemistry- Principle and Technique – A. Upadhyay, K. Upadhyay and N. Nath, Himalaya Publishing House, Bombay, (1998).
4. Essentials of Physical Chemistry and Pharmacy – H. J. Arnikar, S. S. Kadam, K.N. Gujan, Orient Longman, Bombay, (1992).
5. Applied Biopharmacokinetics and Pharmacokinetics - Leon Shargel, Andrew YuPrentice- Hall International, Inc (4th edition).
6. Essentials of Physical Chemistry and Pharmacy – H.J. Arnikar, S.S. Kadam, K.N. Gujan, Orient Longman, Bombay, (1992).

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	3	2	3	2	3	2
CO2	2	1	3	1	1	3	1	1	2
Avg	2.5	1	3	2	1.5	3	1.5	2	2

SECOND SEMESTER
HARD CORE PAPERS

CHI HCT: 2.1. COORDINATION CHEMISTRY

Objectives:

- To understand the preparation, properties, electronic configuration and structural elucidation of coordination compounds.
- To learn the reaction mechanism, stereochemistry and photochemistry of coordination compounds.

Course outcome:

- Gain the knowledge of preparative methods of coordination compounds and geometries of different coordination numbers.
- Understand the CFT and MOT bonding theories of metal complexes.
- Electronic spectra, magnetic properties and infrared spectroscopy of coordination compounds. In addition, understand the reaction mechanism and photochemistry of coordination compounds.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Preparation of coordination compounds: Introduction, Preparative methods- simple addition reactions, substitution reactions, oxidation-reduction reactions, thermal dissociation reactions. Geometries of metal complexes of higher coordination numbers (2-8).

Stability of coordination compounds: Introduction, trends in stepwise stability constants, factors influencing the stability of metal complexes with reference to the nature of metal ion and ligands, the Irving-William series, chelate effect.

Determination of stability constants: Theoretical aspects of determination of stability constants of metal complexes by spectrophotometric methods.

Crystal field theory: Salient features of CFT, d-orbital splitting in octahedral, tetrahedral, square planar and tetragonal complexes, Jahn-Teller distortions, measurement of 10 Dq and factors affecting it. Evidences for metal-ligand covalency.

Molecular Orbital Theory: MOT to octahedral, tetrahedral and square planar complexes without and with pi-bonding.

UNIT-II

[16 HOURS]

Electronic spectra: Introduction, selection rules and intensities, electronic spectra of octahedral and tetrahedral complexes, Term symbols for d^n ions, Orgel and Tanabe-Sugano diagrams, charge-transfer spectra. Ligand-field transition. Charge transfer and energy applications. Optical rotatory dispersion and Circular dichroism. Magnetic circular dichroism.

Magnetic properties: Introduction, magnetic susceptibility and its measurements, spin and orbital contributions to the magnetic moment, the effects of temperature on μeff, spin-cross over, ferromagnetism, anti-ferromagnetism and ferrimagnetism.

Applications of infrared spectroscopy of coordination compounds: Metal complexes of ammine, nitro, nitrito, hydroxo, carbonato, sulphato, cyano, cyanato and thiocyanato complexes.

UNIT-III

[16 HOURS]

Reactions and Mechanisms: Introduction. Substitution reactions- Inert and labile compounds, mechanisms of substitution. Kinetic consequences of Reaction pathways- Dissociation, interchange and association. Experimental evidence in octahedral substitution- Dissociation, associative mechanisms, the conjugate base mechanism, the kinetic chelate effect.

Stereochemistry of reactions- Substitution in *trans* and its complexes, isomerization of chelate rings. Substitution reactions of square-planar complexes-kinetics and stereochemistry of square-planar substitutions, evidence for associative reactions, explanations of the *trans* effect.

Electron-transfer processes: Inner-sphere mechanism and outer-sphere mechanism, conditions for high and low oxidation numbers.

Photochemistry of coordination compounds: Photochemistry of chromium(III) ammine compounds, Light-induced excited state spin trapping in iron(II) compounds and MLCT photochemistry in pentammineruthenium(II) compounds.

References

1. Physical Inorganic Chemistry- A Coordination Chemistry Approach- S.F.A. Kettle, Spektrum, Oxford, (1996).
2. Inorganic Chemistry-4th edition. C.E. Housecroft and A.G. Sharpe, Pearson Education Ltd. (2012).
3. Inorganic Chemistry-5th edition. G.L. Miessler, P. J. Fischer and D.A. Tarr, Pearson (2014).
4. Inorganic Chemistry-6th edition. D.F. Shriver, M. Weller. T. Overton, J. Rourke and F. Armastrong, Oxford University Press (2014).
5. Inorganic Chemistry- 3rd edition, James E. Huheey, Harper and Row Publishers, (1983).
6. Basic Inorganic Chemistry- 3rd edition, F.A. Cotton, G. Wilkinson and P.L. Gaus, John Wiley and Sons, (2002).
7. Infrared and Raman Spectra of Coordination Compounds, Part-B- 6th edition, K. Nakamoto, John Wiley and Sons (2009).

Course Articulation Matrix

Pos / Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	1	1	1	2
CO2	3	2	3	2	3	1	1	1	2
CO3	3	2	3	3	3	3	2	2	3
Avg	3	2	2.67	2.33	3	1.33	1.33	1.33	2.33

CHO HCT: 2.2. SYNTHETIC ORGANIC CHEMISTRY

Objectives:

- To understand the reactions of organic compounds involving various reagents.
- To learn the synthesis and retro-synthesis of different organic compounds.

Course outcome:

- Students are familiar about chemistry of oxidants, reductants and their applications in the organic synthesis.
- Understand the various catalysts in organic synthesis by known naming reactions.
- Retro-synthesis and molecular rearrangement.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern method like power point presentation is used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Oxidation: Oxidation with chromium and manganese reagents (CrO_3, $K_2Cr_2O_7$, PCC, PDC, Sarret reagent, MnO_2, $KMnO_4$), peroxides and peracids, periodic acid, OsO_4, SeO_2, NBS, Oppenauer oxidation, Sharpless epoxidation.

Reduction: Catalytic hydrogenation (homogeneous and heterogeneous) – catalysts (Pt, Pd, Ra- C, Ni, Ru, Rh), solvents and reduction of functional groups, catalytic hydrogen transfer reactions. Wilkinson catalyst, $LiAlH_4$, $NaBH_4$, DIBAL-H, Sodium cyanoborohydride, Birch reduction, Leukart reaction (reductive amination), diborane as reducing agent, Meerwein-Ponndorf-Verley reduction, Wolff-Kishner reduction, Clemensen reduction, stannous chloride, Organoboron compounds: Introduction and preparations; Hydroboration and its applications; Reactions of organoboranes: isomerization reactions, oxidation, protonolysis, carbonylation, cyanidation. Reactions with aldehydes or ketones (*E* and *Z*-alkenes).

UNIT-II

[16 HOURS]

Reagents and reactions in organic synthesis: Use of following reagents in organic synthesis and functional group transformations: Lithium diisopropylamide (LDA), Gilmann reagent, dicyclohexyl carbodimide (DCC), dichlorodicyanoquinone (DDQ), Silane reagents-trialkylsilyl halides, trimethylsilyl cyanide, trimethyl silane; phase transfer catalyst, crown ethers, cyclodextrins, Ziegler-Natta catalyst, diazomethane, Woodward and Prevost hydroxylation, Stark enamine reaction, phosphorous ylides - Wittig and related reactions, Sulphur ylides – reactions with aldehydes and ketones, 1,3-dithiane anions - Umpolung reaction, Peterson reaction. Palladium reagents: Suzuki coupling, Heck reaction, Negishi reaction. Green Chemistry: Definition and principles.

UNIT-III

[16 HOURS]

Molecular rearrangements: Introduction Carbon to carbon migration: Pinacol-pinacolone, Wagner-Meerwein, Benzidine, benzylic acid, Favorskii, Fries rearrangement, dienophile rearrangement. Carbon to nitrogen migration: Hofmann, Curtius, Lossen, Schmidt and Beckmann rearrangements. Miscellaneous rearrangements: Wittig, Smiles, Bayer-Villeger rearrangement and Barton reaction.

Retrosynthesis: Introduction to disconnection approach: Basic principles and terminologies used in disconnection approach. One group C-X and two group C-X disconnections. Synthons and synthetic equivalents. Retrosynthesis and synthesis of benzofurans, *p*-methoxy acetophenone, saccharine, α-bisabolene, nuciferal, tetralone, ibuprofen; Functional group transformations in organic synthesis: nitro to keto, nitro to amine, acid to alcohol etc.

References

1. Organic Chemistry, VI edition, Robert T. Morrison, Robert N. Boyd.
2. Organic Chemistry, Vol-I & II by I. L. Finar.
3. Advance Organic Chemistry, IV edition, Jerry March.
4. Advance Organic Chemistry, III edition, Part-A and Part-B, Francis A. Carey and Rechard J. Sundberg.
5. Organic Chemistry, III edition, V. K. Ahluwalia and Rakesh Kumar Parashar.
6. Organic named reactions and molecular rearrangements, Gudeep Raj.
7. Modern synthetic reactions, II edition, H. O. House.
8. Organic synthesis, Jagadamba Singh and L. D. S. Yadav.
9. Green Chemistry, K. R. Desai.
10. Principles of Organic synthesis, R. O. C. Norman and J. M. Coxon.
11. Organic synthesis II edition, V. K. Aluwalia and Renu Agarwal.
12. Organic synthesis, Robert E. Ireland.
13. Schaum's outline of theory and problems of Organic Chemistry, Harbert Meislich, Howard Nechamkin and Jocob Sharefkin.
14. Organic chemistry by Clayden, Greeves, Warren and Wothers.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	2	2	1	2	2
CO2	3	1	3	1	2	2	1	2	2
CO3	3	1	3	3	1	2	2	2	3
Avg	3	1	3	2	1.67	2	1.33	2	2.67

CHP HCT: 2.3. PRINCIPLES OF PHYSICAL CHEMISTRY

Objectives:

- To understand the theoretical calculations of energies of simple molecules.
- To learn the calculation of different energies by statistical thermodynamics.
- To understand the basics of polymers, their kinetics and applications.

Course outcome:

- Principles of Quantum chemistry and theoretical calculations of energies of molecules and chemical reactions.
- Apply solutions of the Schrödinger equation for simple systems (particle in a box, rigid rotor, harmonic oscillator) to real systems (vibrational, rotational, and electronic energy states) in determining the energy of stationary states.
- Explain angular momentum as possessed by atomic or molecular systems, various descriptions of how angular momentum can be coupled, and how conservation of angular momentum is important to spectroscopy.
- Concepts and applicability of statistical thermodynamics in the calculations of different energies in the reacting system. Applications of phase rule for separation of the metals from ore.
- Fundamentals of polymers and their applications in controlling the quality and waste management of polymer product.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern method like power point presentation is used in class room teaching.
- Assigning the students to solve the problems to understand the concepts.

Course content

UNIT-I

[16 HOURS]

Quantum Chemistry: Introduction to quantum mechanics: Schrödinger wave equation, time-independent and time dependent Schrödinger wave equation and the relation between their solutions. Eigen functions and Eigen values. Physical interpretation of wave function. Concept of operators – Laplacian, Hamiltonian, Linear and Hermitian operators. Angular momentum

operators and their properties. Commutative and non-commutative operators. Normalization, orthogonality and orthonormality of wave functions. Postulates of quantum mechanics. Solutions of Schrödinger wave equation for free particles, particle in a ring, particle in three dimensional box. Quantum mechanical degeneracy, tunnelling (no derivation). Wave equation for H-atom, separation and solution of R, ϕ and θ equations. Application of Schrodinger equation to rigid rotator and harmonic oscillator. Eigen functions and Eigen values of angular momentum. Ladder operator method for angular momentum.

UNIT-II
[16 HOURS]

Statistical thermodynamics: Objectives of statistical thermodynamics, concept of distribution, types of ensembles. Thermodynamic probability and most probable distribution law. Partition functions – definition, evaluation of translational, rotational and vibrational and electronic partition functions for monoatomic, diatomic and polyatomic gaseous molecules. Sackur- Tetrode equation for entropy of translation function. Calculation of thermodynamic functions and equilibrium constants in terms of partition functions. Different distribution laws (Types of statistics): Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac Statistics (derivation of the three distribution laws). Comparison of Bose-Einstein and Fermi-Dirac Statistics with Maxwell- Boltzmann statistics. Problems and their solutions.
Phase rule studies: Thermodynamic derivation of phase rule. Application of phase rule to the two component systems - compound formation with congruent melting point and incongruent melting points, Roozeboom‘s classification. Application of phase rule to three component systems- systems of three liquids and systems of two salts and water.

UNIT-III
[16 HOURS]

Polymers: Fundamentals of polymers - monomers, repeat units, degree of polymerization. Linear, branched and network polymers. Classification of polymers, Polymerization - condensation, addition, free radical, ionic, co-ordination polymerization and ring opening polymerization. Molecular weight and size, polydispersion. Average molecular weight concepts
–number, weight and viscosity average molecular weight. Determination of molecular weights - viscosity method, osmotic pressure method, sedimentation and light scattering methods. **Kinetics of Polymerization** - Condensation, addition, free radical, ionic, co-ordination polymerization.
Phase transitions in polymers and thermal characterization: Glass transition, crystallinity and melting- correlation with the polymer structure.
Polymers in solution: Criteria of polymer solubility, thermodynamics of polymer solutions.
Colloids: Types and classification, Micelles: Surface active agents, micellization, hydrophobic interaction, critical micellar concentration (CMC), factors affecting the CMC of surfactants, micellar catalysis.

References

1. Text Book of Physical Chemistry by Samuel Glasstone, MacMillan Indian Ltd., 2nd edition (1974).
2. Quantum Chemistry – A.K. Chandra. 2nd edition, Tata McGraw Hill Publishing Co. Ltd., (1983).
3. Quantum Chemistry – Eyring, Walter and Kimball. John Wiley and Sons, Inc., New York.
4. Quantum Chemistry – I.N. Levine. Pearson Education, New Delhi, (2000).
5. Theoretical Chemistry – S. Glasstone. East West Press, New Delhi, (1973).
6. Quantum Chemistry – R.K. Prasad, New Age International Publishers, (1996).
7. Text Book of Polymer Science, F.W. Billmeyer, Jr., John Wiley, London (1994).
8. Polymer Science. V. R. Gowrikar, N.V. Vishwanathan and J. Sreedhar, Wiley Eastern, New Delhi (1990).
9. Fundamentals of Polymer Science and Engineering. A. Kumar and S.K. Gupta, Tata – McGraw Hill New Delhi (1978).
10. Polymer Characterization, D. Campbell and J.R. White, Chapman and Hall, New York.
11. Fundamental Principles of Polymer Materials, R.L. Rosen, John Wiley and Sons, New York.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	3	2	1	2	1	1	2
CO2	3	2	3	1	2	2	1	1	1
CO3	3	2	3	1	1	2	1	1	1
CO4	3	2	3	1	2	2	1	1	1
CO5	3	2	3	4	3	2	3	2	3
Avg	3	2	3	1.8	1.8	2	1.40	1.20	1.60

CHG HCT: 2.4. MOLECULAR SYMMETRY AND SPECTROSCOPY

Objectives:

- To understand the concepts of symmetry and symmetry operations and their application to CFT, hybridization, MOT and vibrational spectroscopy.
- To learn the theory and applications of microwave, vibration and Raman spectroscopy.
- To understand the principles and applications of UV-Visible and resonance Raman spectroscopy.

Course outcome:

- Molecular symmetry and applications of group theory to CFT, hybridization, MOT and vibrational spectroscopy.
- Theory and principles of Rotation, Vibration and Raman Spectroscopy.
- Theory and principles Electronic and Resonance Raman spectroscopy.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Molecular models are used to teach symmetry aspects of molecules
- Modern methods like power point presentation and animations are used in class room teaching.
- Students will be assigned to solve the numerical problems.

Course content

UNIT-I

[16 HOURS]

Molecular symmetry and group theory: Symmetry elements and symmetry operations.

The Point Groups Used with Molecules: Concept of a group, definition of a point group. Classification of molecules into point groups. Subgroups.

Hermann-Maugin symbols for point groups. Multiplication tables (C_{2V}, C_{2h} and C_{3V}). Matrix notation for the symmetry elements. Classess and similarity transformation.

Representation of groups: The Great Orthogonality theorem and its consequences. Character tables (C_s, C_i, C_2, C_{2v}, C_{2h} and C_{3v}). Symmetry and dipole moment.

Applications of group theory: Group theory and hybrid orbitals.

Symmetry in Chemical bonding: Group theory to Crystal field theory and Molecular orbital theory (octahedral and tetrahedral complexes).

Symmetry in Vibrational Spectroscopy: Determining the symmetry groups of normal modes for non-linear molecules (H_2O, NH_3, CH_4, trans-N_2F_2) and linear molecules (CO, HCl, HCN and CO_2) (Integration method).

UNIT-II

[16 HOURS]

Microwave spectroscopy: Moment of inertia expression for linear di-atomic molecules. Rotation spectra of diatomic Molecules - rigid and non rigid rotator model. Rotational quantum number and the selection rule. Effect of isotopic substitution on rotation spectra. Classification of polyatomic molecules based on moment of inertia. Rotation spectra of polyatomic molecules (OCS CH_3F and BCl_3). Applications - Principles of determination of Bond length and moment of inertia from rotational spectra. Stark effect in rotation spectra and determination of dipole moments.

Vibration spectroscopy*:* Vibration of diatomic molecules, vibrational energy curves for simple harmonic oscillator. Effects of anharmonic oscillation, expressions for fundamental and overtone frequencies. Vibration - rotation spectra of carbon monoxide. Vibration of polyatomic molecules – The number of degrees of freedom of vibration. Parallel and perpendicular vibrations (CO_2 and H_2O). Combination, difference and hot bands. Fermi resonance. Force constant and its significance. Theory of infrared absorption and theoretical group frequency. Intensity of absorption band and types of absorptions. Applications: Structures of small molecules: XY_2 – linear or bent, XY_3 – planar or pyramidal.

Raman spectroscopy: Introduction, Raman and Rayleigh scattering, Stokes and anti-Stokes lines, polarization of Raman lines, depolarization factor, polarizability ellipsoid. Theories of Raman spectra - classical and quantum theory. Rotation-Raman and vibration-Raman spectra. Raman activity of vibrations, rule of mutual exclusion principle. Vibration modes of some simple molecules and their activity.

UNIT-III

[16 HOURS]

UV Visible spectroscopy: Quantitative aspects of absorption – Beer's law, Technology associated with absorption measurements. Limitations – real, chemical, instrumental and personal. Theory of molecular absorption. Vibration-rotation fine structure of electronic spectra. Types of absorption bands: n to π^*, π to π^*, n to σ^* and σ to σ^*, C-T and ligand field. Instrumentation.

Applications: Qualitative and quantitative analysis of binary mixtures, measurements of dissociation constants of acids and bases, determination of molecular weight. Woodwards empirical rules for predicting the wavelength of maximum absorption for olefins, conjugated dienes, cyclic trienes and polyenes, α,ß-unsaturated aldehydes and ketones, benzene and substituted benzene rings.

Resonance Raman Spectroscopy: Resonance Raman Effect and its applications. Non-linear Raman effects: Hyper, stimulated and inverse Raman effects. Coherent Anti-Stokes Raman Scattering and its applications.

References

1. Chemical Applications of Group Theory, 3rd edition, F.A. Cotton, John Wiley and Sons (2006).
2. Molecular Symmetry and Group Theory – Robert L Carter, John Wiley and Sons (2005).
3. Symmetry in Chemistry - H. Jaffe and M. Orchin, John Wiley, New York (1965).
4. Molecular Symmetry – David J. Willock, John Wiley and Sons Ltd., (2009).
5. Group Theory and its Chemical Applications - P.K. Bhattacharya, Himalaya Publications, New Delhi (1998).
6. Fundamentals of Molecular Spectroscopy, C.N. Banwell and E.M. McCash. 4th edition, Tata McGraw Hill, New Delhi.
7. Fundamentals of molecular spectroscopy, G. M. Barrow, MgGraw Hill, New York (International students Edition), 1974.
8. Theoretical chemistry, S. Glasstone, affiliated East-West Press Pvt. Ltd, New Delhi, 1973.
9. Spectroscopy, B.P. Straughan and S. Walker, John Wiley & Sons Inc., New York, Vol. 1 and 2, 1976.
10. Vibration Spectroscopy Theory and Applications, D.N. Satyanarayana, New Age International, New Delhi (2004).
11. Spectroscopy, B.P. Straughan and S. Salker, John Wiley and Sons Inc., New York, Vol.2, 1976.
12. Organic Spectroscopy, William Kemp, English Language Book society, Macmillan, 1987.
13. Instrumental methods of analysis, H. H. Willard, L. L. Merritt and J. A. Dean, 7th Edition, 1988.
14. Physical methods in inorganic chemistry, R. S. Drago, affiliated East-West press Pvt. Ltd., (Student Edition) 1978.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	3	1	2	1	1	3
CO2	3	1	3	3	1	2	1	1	2
CO3	3	1	3	2	2	2	1	1	2
Avg	3	1	3	2.67	1.33	2	1	1	2.33

OPEN ELECTIVE (FOR NON-CHEMISTRY STUDENTS ONLY)
CH OET:2.1/3.1- GENERAL CHEMISTRY

Objectives:

- To understand the basic concepts of chemistry including periodic properties of elements, structure and bonding.
- To learn the applications of synthetic products and biological importance of natural products. .
- To understand the basic concepts of thermodynamics, chemical kinetics, ionic equilibria and electrochemistry.
- To learn the statistical evaluation of experimental data. Applications of titrimetric methods and separation techniques.

Course outcome:

- Periodic properties of elements, structure and bonding of ionic compounds as well as various concepts of acids and bases.
- Hybridization, bonding and molecular structure of simple organic molecules. And also, biological importance of natural products.
- Basic concepts of thermodynamics, chemical kinetics, electrochemistry and ionic equilibria and their applications.
- Statistical evaluation of experimental data, concept of titrimetric and chromatographic methods.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.
- Students will be assigned to solve the numerical problems to understand the concepts.

Course content

UNIT-I

[16 HOURS]

Periodic table and chemical periodicity: Periodic properties of elements, State of Matter, their resources. Important periodic properties of the elements, covalent radii, ionic radii, ionization potential, electron affinity and electronegativity.

Structure and Bonding: Properties of ionic compounds, structure of crystal lattices (NaCl, CsCl, ZnS, Wurtzite and rutile), Lattice energy, Born-Haber Cycle, radius ratio rules and their limitations.MO treatment for homo- and heteronuclear diatomic molecules. VSEPR model to simple molecules. Factors affecting the radii of ions, covalent character in ionic bonds, hydration energy and solubility of ionic compounds.

Concepts of Acids and Bases: Review of acid base concepts**.** Lux-Flood and solvent system oncepts. Hard-soft acids and bases. Applications.

UNIT-II

[16 HOURS]

Bonding and molecular structure: Introduction to organic chemistry, atomic orbitals, sigma and pi bond formation-molecular orbital (MO) method, sp, sp^2 and sp^3 hybridization, bond length, bond dissociation energies and bond angles (open chain and cyclic compounds). Electronegativity and polarity of the bonds. Classifications and reactions of organic compounds (with examples).

Acids and bases: Hydrogen bonding, resonance and inductive effective on strengths of acids and bases.

Biological importance of natural products: Amino acids, proteins, carbohydrates (cellulose, starch, glycogen), lipids (fats and oils, phospholipids), prostaglandins, nucleic acids, steroids, alkaloids, vitamins, flavonoids.

Applications of synthetic products: Dyes, drugs, polymers (plastics), soaps and detergents, pesticides and pheromones.

UNIT-III

[16 HOURS]

Thermodynamics: First and second laws of thermodynamics. Concept of entropy and free energy, entropy as a measure of unavailable energy. Entropy and free energy changes and spontaneity of process.

Chemical kinetics: Rate and order of reaction. Factor affecting the rate of reaction. and determination Order of reaction. Energy of activation and its determination. Brief account of collision and activated complex theories.

Ionic equilibria: pH scale, buffer solutions, calculation of pH of buffer solutions, buffer capacity and buffer index, buffer mixtures.

Solutions: Concentration units, solutions of liquids in liquids, Raoult‘s law, ideal and non-ideal solutions.

Electrochemistry: Electrolytic conductance, specific, equivalent and molar conductance, ionic mobility and transference number, factors affecting the electrolytic conductance, Arrhenius theory of strong and weak electrolytes, assumptions of Debye-Huckel theory of strong electrolytes. Single electrode potential, reference electrodes, galvanic cells, emf of galvanic cells and construction of electrochemical cells.

UNIT-IV

[16 HOURS]

Basic Statistics and Data Handling: Significant figures, accuracy and precision. Types of errors: Determinate error and indeterminate error. Definitions for statistics. Quantifying random error: Confidence limits, variance. Rejection of results.

Applications of titrimetric methods: Introduction, theory and applications of acid base titrimetry, complexometric titrations and redox titrimetry

Separation techniques: Purification-Crystallization, sublimation, fractional crystallization, distillation techniques (simple distillation, steam distillation, distillation under reduced pressure, and fractional distillation), solvent extraction.

Chromatography: Thin layer chromatography and ion-exchange chromatography and their applications in the separation of the components from the mixture.

References

1. Text Book of Physical Chem., by Samuel Glasstone, MacMillan Indian Ltd., 2nd Ed. (1974)
2. Elements of Physical Chem., by Lewis and Glasstone, 2nd Edn. Macmillan & Co Ltd.
3. Organic Chemistry, VI edition, Robert T. Morrison, Robert N. Boyd.
4. Organic Chemistry, Vol-I by I. L. Finar.
5. Vogel' text book of practical organic chemistry, V edition, B. S. Furniss, A. J. Hannaford, P. W. G. Smith, A. R. Tatehell.
6. Laboratory manual of Organic Chemistry by B. B. Dey and M. V. Sitaraman.
7. Practical Organic Chemistry by Mann F. G. and Saunders.
8. Fundamentals of analytical Chem., 8th Edition, D. A. Skoog, West, Holler and Crouch.
9. Principles and Practice of Analytical Chemistry, F.W. Fifield and Kealey, 3rd edition, 2000, Blackwell Sci., Ltd. Malden, USA.
10. Modern Analytical Chemistry, David Harvey, McGraw Hill, New Delhi, 2000

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	2	2	1	1	2
CO2	3	1	3	2	1	1	1	1	3
CO3	3	1	3	2	3	2	1	1	3
CO4	3	2	3	3	2	3	2	1	3
Avg	3	1.25	3	2.25	2	2	1.25	1	2.75

THIRD SEMESTER
HARD CORE PAPERS

CHI HCT: 3.1. ADVANCED INORGANIC CHEMISTRY

Objectives:

- To understand the fundamental concepts of organometallic chemistry and general principles of homogeneous and heterogeneous catalysis.
- To learn the concepts of metal clusters, silicates and silicones.

Course outcome:

- Fundamental concepts of organometallic chemistry and synthesis, structure and bonding in different organometallics and their applications.
- Homogeneous and heterogeneous catalysts and their applications in the synthesis of organic compounds in industries.
- Chemistry of main group elements, metal clusters, silicates and silicones and their applications in day to day life.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Fundamental concepts: Introduction, Classification of organometallic compounds by bond type, nomenclature, the effective atomic number rule, complexes that disobey the EAN rule, common reactions used in complex formation.

Organometallics of transition metals: Preparation, bonding and structures of nickel, cobalt, iron and manganese carbonyls. Preparation and structures of metal nitrosyls.

Ferrocene: Preparation, structure and bonding**. Metal-carbene and metal-carbyne complexes**. **Complexes containing alkene, alkyne, arene and allyl ligands**: Preparation, structure and bonding.

UNIT-II

[16 HOURS]

General principles of Catalysis: Language of catalysis. Homogeneous and heterogeneous catalysts.

Homogeneous catalysis - Industrial Applications: Alkene hydrogenation and hydroformylation, The Wacker‘s process, Monsanto acetic acid process and L-DOPA synthesis, alkene oligomerizations, water-gas shift reactions. The Reppe reaction.

Heterogeneous catalysis –The nature of heterogeneous catalysts. Alkene polymerization: Ziegler-Natta catalysis, Fischer-Tropsch carbon chain growth.

Zeolites as catalysts for organic transformation: Uses of ZSM – 5.

Alkene metathesis, hydroboration, arylation or vinylation of olefins (Heck reaction).

Biological and Medicinal Applications: Organomercury, organoboron, organosilicon and organoarsenic compounds.

UNIT-III

[16 HOURS]

Chemistry of main group elements: Diborane and its reactions, polyhedral boranes(preparation, properties, structure and bonding). Wade's rules, carboranes and metallocarboranes. Borazines. Phosphazenes, S-N compounds.

Metal clusters: Evidences and factors favoring of M-M bonding, Wade's-Mingo's-Lauher rules, bi, tri, tetra, penta and hexa nuclear metal carbonyl clusters.

Low and high nuclearity carbonyl clusters. Electron counting schemes in carbonyl clusters. The isolobal analogy.

Silicates: Structure, classification - silicates with discrete anions, silicates containing chain anion, silicates with layer structure, silicones with three dimensional net-work and applications.

Silicones: General methods of preparation, properties. Silicone polymers - silicone fluids, silicone greases, silicone resins, silicone rubbers and their applications.

References

1. Organometallic Chemistry, 2nd edition, R.C. Mehrothra and A. Singh, New Age International Publications (2006).
2. Fundamental Transition Metal Organometallic Chemistry - Charles M. Lukehart, Brooks, Cole Publishing Company (1985).
3. The Organometallic Chemistry of the Transition Metals, 4th edition, Robert H. Crabtree, Wiley Interscience, (2005).
4. Organometallics - A Concise Introdution, 2nd edition, ChistophElschenbroich and Albert Salzer VCH, (1992).
5. Inorganic Chemistry, 2nd edition, C.E. Housecroft and A.G. Sharpe, Pearson Education Ltd., (2005).
6. Inorganic Chemistry- 3rd edition, G.L. Miessler and D.A. Tarr, Pearson Education,(2004).
7. Basic Organometallic Chemistry - B.D. Gupta and A.J. Elias, Universities Press (2010).
8. Inorganic Chemistry Principles of Structure and Reactivity: James E. Huheey, Ellen A.
9. Keiter, Richard L. Keiter, Okhil K. Medhi, Delhi University, New Delhi (2006)
10. Chemistry of the Elements – N.N. Greenwood and A. Earnshaw, Pergamon Press (1985).
11. Inorganic Chemistry, 6th edition. D.F. Shriver, M. Weller. T. Overton, J. Rourke and F. Armastrong, Oxford University Press (2014).
12. Organometallic Chemistry and Catalysis, Didier Astruc, Springer (2007).
13. Transition Metal Organometallic Chemistry, Francois Mathey, Springer (2013).

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	2	2	2	2	2	1	2
CO2	3	1	2	1	1	1	2	1	2
CO3	3	1	2	2	2	2	1	1	2
Weighted Average	3	1	2	1.66	1.66	1.66	1.66	1	2

CHO HCT: 3.2. ORGANOMETALLIC AND PHOTOCHEMISTRY

Objectives:

- To understand the fundamental concepts of photochemistry and pericyclic reactions.
- To learn the synthesis and reactions of organometallic compounds.
- To learn the asymmetric synthesis of organic compounds.

Course outcome:

- Basic concepts of photochemistry and pericyclic reactions and their usefulness in the synthesis of many organic compounds.
- Synthesis of organic compounds using different organometallic compounds as catalysts.
- Asymmetric synthesis of organic compounds using chiral compounds.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation is used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Photochemistry: Light absorption and electronic transitions, Jablonski diagram, intersystem crossing, energy transfer, sensitizers, quenchers. Photochemistry of olefins, conjugated dienes, aromatic compounds, ketones-Norrish type-I and Norrish type-II reactions, enones, Paterno- Buchi reaction, di-pi methane rearrangement, photooxidation, photoreduction.

Pericyclic reactions: Electrocyclic reactions: Stereochemistry, symmetry and Woodward- Hofmann rules for electrocyclic reactions, FMO theory of electrocyclic reactions, correlation diagram for butadiene to cyclobutene and hexatriene to cyclohexadiene systems. Cycloaddition reactions: Classification, analysis by FMO and correlation diagram method. Cycloaddition reactions: [2+2] and [4+2] cycloadditions-FMO and correlation diagram method, Deil's-Alder reaction, hetero Diels-Alder reaction and their applications. Intra and intermolecular 1,3-dipolar cycloadditions: involving nitrile oxide, nitrile imine, nitrile ylide and their application in organic synthesis. Sigmatropic reactions: Classification, stereochemistry and mechanisms. suprafacial and antarafacial shifts of H and carbon moieties. [3,3] and [5,5]-sigmatropic rearrangement, Claisen, Cope and aza-Cope rearrangement.

UNIT-II

[16 HOURS]

Chemistry of organometallic compounds: Synthesis and reactions of organolithium (n-BuLi, PhLi), organocadmium, organomagnesium (Grignard reagent), organoselenium, Organozinc and organotellurium. Organoaluminium reagents: Preparation, site selective and stereoselective additions of nucleophiles mediated by organoaluminum reagents, reaction with acid chlorides, allyl vinyl ethers, 1,2-addition to imines and application in the synthesis of natural products. Organocopper reagents: Gilmann reagent, preparation, reactions with aldehydes, ketones and imines. Organosamarium reagents: Reactions promoted by samarium diiodide and dicyclopentadienyl samarium – Barbier type reaction, Reformatsky type reactions, ketyl- alkene coupling reactions, pinacolic coupling reactions, Organotin reagents: tributyltin hydride, Barton decarboxylation reaction, Barton deoxygenation reaction, Stille coupling, Stille-Kelley coupling reactions, Barton McCombie reaction, Keck stereoselective allylation and other applications.

UNIT-III

[16 HOURS]

Asymmetric synthesis: Definition, importance, mechanism, energy consideration, advantages and limitations, methods of determination of enantiomeric excess. Methods of asymmetric induction:

Topocity-Prochirality: Substrate selectivity - Diastereoselectivity and enantioselectivity- Substrate controlled methods-use of chiral substrates - examples

Auxiliary controlled methods: Use of chiral auxiliaries - Chiral enolates-alkylation of chiral imines - Asymmetric Diels - Alder reaction

Reagent controlled methods: Use of chiral reagents - Asymmetric oxidation – Sharpless epoxidation - Asymmetric reduction - Use of lithium aluminium hydride and borate reagents. Synthesis and applications of oxazaborolidines, IPC-BBN, IPC2BH, (*S*)-BINAP-DIAMINE and (*R*)-BINAL-H. Use of (*R,R*)-DIPAMP, (*S,S*)-CHIRAPHOS, (*R,R*)-DIOP, SAMP, RAMP, *S*-Proline, *S*-PBMgCl, (-)-BOAlCl2, (+) and (-)-DET.

References

1. Organic Chemistry, VI edition, Robert T. Morrison, Robert N. Boyd.
2. Advance Organic Chemistry, IV edition, Jerry March.
3. Advance Organic Chemistry, III edition, Part-A and Part-B, Francis A. Carey and Rechard J. Sundberg.
4. Organic Chemistry, III edition, V. K. Ahluwalia and Rakesh Kumar Parashar.
5. Schaum's outline of theory and problems of Organic Chemistry, Harbert Meislich, Howard Nechamkin and Jocob Sharefkin.
6. Asymmetric synthesis, Garry Procter.
7. Mechanism in Organic Chemistry, VI edition, Peter Sykes.
8. Molecular reactions and photochemistry, Charles H. Depuy, Orville L. Chopman.
9. Modern methods of Organic synthesis, III edition, W. Carruthers.
10. Organometallics in Organic synthesis, J. M. Swan and D. Stc Black.
11. Organic chemistry by Clayden, Greeves, Warren and Wothers.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	1	1	2	2	2	1	2	1
CO2	2	1	2	1	1	1	2	2	2
CO3	2	1	1	2	2	1	1	2	2
Weighted Average	2	1	1.66	1.66	1.66	1.33	1.33	2	1.66

CHP HCT: 3.3. ADVANCED PHYSICAL CHEMISTRY

Objectives:

- To understand the concepts of enzyme kinetics, industrial catalysis and linear free energy relationship.
- To learn the electrochemical aspects of batteries and electroplating.
- To understand the mechanism of corrosion prevention of metals by different methods.
- To understand the fundamentals of X-ray crystallography.

Course outcome:

- Applications of reaction kinetics help in correlating the rates of biological and chemical reactions.
- Theory and applications of electrochemical systems helps in the field of e-waste management and protection of metals.
- Fundamentals of X-ray crystallography and structural interpretation by various X-ray diffraction techniques.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animation are used in class room teaching.
- Students will be assigned to solve the numerical problems to understand the concepts.

Course content

UNIT-I

[16 HOURS]

Homogeneous Catalysis: Electronic and structural effects on acidity and basicity. Hard and soft acids and bases. Acidity functions: Hammet acidity function, Zucker-Hammet hypothesis, Bonnett hypothesis. Industrial catalysis: Catalyst carrier, promoter, inhibitor and catalyst poison. **Enzyme kinetics:** Effect of substrate concentration (Michaelis - Menton equation), Effect of pH, effect of catalysts and inhibitors (substrate, zeolite, Cr^{3+}, Fe^{2+} ZnO, U.V light), effect of temperature. A brief kinetic and mechanistic applications of glucose oxidase in the oxidation of glucose.

Linear Free Energy Relationship: Hammett equation, Taft equation, Okemoto Brown equation and its application to oxidation of amino acids and aromatic amines. Swain-Scott and Edward equation. Winstein - Grunwald relationship. Isokinetic relationship and significance of isokinetic temperature, Exner criterion.

Kinetic Isotope Effect: Theory of kinetic isotope effect - normal and inverse isotope effect, primary isotope effect, secondary isotope effect, solvent isotope effect.

UNIT-II

[16 HOURS]

Electrochemical cells and batteries: Introduction, galvanic and electrolytic cells, schematic representation of cells. Faradays's law, mass transfer in cells. Batteries: Classification, characteristics, primary, secondary and lithium batteries, fuel cells.

Electroplating: Definition, theory and mechanism of electroplating, effect of plating variables on the properties of electro deposits, comparative account of complexing and non-complexing baths (general treatment), additives on plating baths and their significance.

Metallic coating: Preparation of substrate surface, electroplating of Cu and Cr. Application of Au and Ag plating.

Corrosion: Types of corrosion, basis of electrochemical corrosion, theories and mechanism of wet corrosion. Thermodynamic aspects of corrosion. Current – potential relations (Evan diagram) in corrosion cells. Factors influencing the rate of corrosion: Metal and environmental factors. Kinetic aspects corrosion: Corrosion rate measurement by different methods – chemical and electrochemical methods. General aspects of corrosion prevention and control – designing aspects, effect of allying and surface modification. Corrosion prevention by painting, phosphating and anodic (passivation) and cathodic protection. Corrosion inhibitors: Introduction, classification, Characteristics and requirements of efficient corrosion inhibitors, Green inhibitors and their significance, Corrosion inhibition mechanism.

UNIT-III

[16 HOURS]

Fundamentals of X-ray crystallography: Law of interfacial angles, laws of symmetry, Miller indices, Bragg equation (No derivation), Experimental methods – powder and rotating crystal methods, indexing of powder and rotating crystal photographs. Atomic scattering factor, structure factor, Fourier synthesis and electron density diagrams. Electron diffraction of gases, experimental technique, Scattering-Intensity curves, Wierl equation (no derivation), Radial distribution method determination of bond lengths and bond angles.

Imperfections in atomic packing: Types of imperfections, classification of imperfections, point defects, Schottky defects, Frenkel defects, disordered crystals, line defects, dislocation types, plane defects, small-angle and large-angle boundaries, stacking faults, crystal growth and twinning, non-stoichiometry.

Imperfections and physical properties: electrical, optical, magnetic, thermal and mechanical properties.

References

1. Chemical Kinetics by K.J. Laidler, Tata McGraw-Hill Pub, Co Ltd, New Delhi.
2. Fundamentals of Chemical Kinetics, M. R. Wright, Harwood publishing, Chichesrer, 1999.
3. Kinetics and Mechanism of Chemical Transformation by J. Rajaram and J.C. Kuriacose, Macmillan, New Delhi.
4. Electrochemistry –Principles and Applications by E.G. Potter, Cleaver-Hume press Ltd, London.
5. Chemical and Electrochemical energy systems, R. Narayan and B. Viswanathan (University Press), 1998.
6. Industrial Electrochemistry, D. Pletcher and F. C. Walsh, Chapman and Hall, 2nd Edn, 1984.
7. An Introduction to Metallic Corrosion and its Prevention, Raj Narayan (Oxford –IBH, New Delhi), 1983.
8. Fundamentals of metallic corrosion, Philips A. Schweitzer, CRC press Taylor and Francis group, New York.
9. Corrosion prevention and control, Baldev Raj, U Kamachi Mudali & S. Rangarajan, Narora Publishing House, India.
10. Solid State Chemistry and its applications – A.R. West, John Wiley & Sons.
11. New Directions in Solid State Chemistry – CNR Rao and J. Gopalakrishna, Cambridge University Press.
12. Solid state chemistry, N. B. Hannay, PHI, New Delhi.
13. Principles of the Solid State – H.V. Keer, Wiley Eastern.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	1	2	2	2	2	2	2
CO2	3	3	2	1	1	2	2	2	2
CO3	3	3	1	2	2	1	2	2	2
Weighted Average	3	3	1.33	1.66	1.66	1.66	2	2	2

CHG HCT: 3.4. CHEMICAL SPECTROSCOPY

Objectives:

- To understand the basic concepts of spectroscopic techniques such as NMR, ESR, NQR, Mossbauer and photoelectron spectroscopy.
- To familiarize with the IR and mass spectroscopy.

Course Outcome:

- Understand the spectroscopic techniques such as NMR, IR, UV, and MS for recording and interpretation of spectra.
- Understand the characterization of chemical compounds.
- To learn electric and magnetic properties of radiation, molecules and bulk matter and solve the problems related to these properties.
- Understanding various fragmentation reactions of organic molecules.
- Predict the NMR, IR, UV, and MS spectra from a given molecular structure, including fragment-ions in MS.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animation are used in class room teaching.
- Students will be assigned to solve the spectroscopic problems to understand the interpretation of spectra.

Course content

UNIT-I

[16 HOURS]

NMR Spectroscopy: Magnetic properties of nuclei (magnetic moment, g factor, nuclear spin), effect of external magnetic field on spinning nuclei, Larmor precession frequency, resonance conditions, population of nuclear magnetic energy levels, relaxation processes, relaxation time, line width and other factors affecting line width. Chemical Shift: Standards employed in NMR, factors influencing chemical shift: electronegativity, shielding and deshielding, van der Walls deshielding magnetic anisotropy, H-bonding, diamagnetic and paramagnetic anisotropies, spin- spin coupling, chemical shift values and correlation for protons bonded to carbon and other nuclei, Instrumentation. Chemical shift equivalence and magnetic equivalence, effects of chiral centre, Karplus curve-variation of coupling constants with dihedral angle. Complex NMR Spectra: Simplification of complex spectra-isotopic substitution, increased magnetic field strength, double resonance and lanthanide shift reagents, Nuclear Overhauser Effect (NOE), FT- NMR Spectroscopy and advantages. ^{13}C-NMR Spectroscopy: multiplicity-Proton decoupling- Off resonance decoupling; Chemical shift, application of ^{13}C, ^{19}F, ^{31}P, ^{11}B and ^{15}N. Applications of NMR: Structural diagnosis, conformational analysis, keto-enol tautomerism, H-bonding. Solid state NMR and its applications.

Multiple resonance spectroscopy: Introduction to 2D-techniques: DEPT, COSY and NOESY.

UNIT-II

[16 HOURS]

Electron Spin Resonance Spectroscopy: Basic principles, hyperfine couplings, the 'g' values, factors affecting g values, isotropic and anisotropic hyperfine coupling constants, Zero Field splitting and Kramer's degeneracy. Measurement techniques and applications to simple inorganic and organic free radicals and to inorganic complexes.

NQR Spectroscopy: Introduction, Principles, Quadrupolar nuclei, electric field gradient, nuclear quadrupole coupling constants, energies of quadrupolar transitions, effect of magnetic field. Applications.

Mössbauer spectroscopy: The Mössbauer effect, chemical isomer shifts, quadrupole interactions, magnetic splitting, measurement techniques and spectrum display, application to the study of $Fe^{2+}$and Fe^{3+}compounds; iron in very high oxidation states-Fe(V) and Fe(VI) nitride complexes; $Sn^{2+}$and Sn^{4+}compounds, nature of M-L bond, coordination number and structure, detection of oxidation states and an inter halogen compound $I_2Br_2Cl_4$.

Photoelectron Spectroscopy: Introduction, principles, chemical shifts, photoelectron spectra of simple molecules. X-ray photoelectron and Auger electron spectroscopy- Principles and applications.

UNIT-III

[16 HOURS]

IR spectroscopy: Introduction, instrumentation, sample handling, Characteristic group frequencies and skeletal frequencies. Finger print region, Correlation chart. Identification of functional groups-alkanes, alkenes, alkynes, aromatics, carbonyl compounds (aldehydes, ketones, esters and lactones), halogen compounds, sulphur and phosphorous compounds, alcohols, amides, lactums, amino acids and amines, Factors affecting group frequencies and band shapes: conjugation, resonance and inductance, hydrogen bonding and ring strain. tautomerism, *Cis-trans* isomerism. Applications of IR spectroscopy.

Mass Spectrometry: Basic principles, Instrumentation-Mass spectrometer, interpretation of mass spectra, resolution, molecular ions, meta-stable ions, Nitrogen rule and isotope ions. Different methods of ionization (chemical ionization, electron impact, field ionization-FAB and MALDI). Fragmentation processes-representation of fragmentation, basic fragmentation types and rules. Factors influencing fragmentations and reaction pathways. McLafferty rearrangement. Fragmentations (fragmentation of organic compounds with respect to their structure determination) associated with functional groups-alkanes, alkenes, cycloalkanes, aromatic hydrocarbons, halides, alcohols, phenols, ethers, acetals, ketals, aldehydes, ketones, quinines, carboxylic acids, esters, amides, acid chlorides, nitro compounds, amines & nitrogen heterocycles. Fragmentation patterns of glucose, myrcene, nicotine, retro Diels-Alder fragmentation. Composite problems involving the applications of UV, IR, ^{1}H and ^{13}C-NMR and mass spectroscopic techniques for the structural elucidation of organic compounds.

References

1. Organic Spectroscopy-3rd Ed.-W. Kemp (Pagrave Publishers, New York), 1991.
2. Spectrometric Identification of Organic Compounds - Silverstein, Bassler & Monnill (Wiley) 1981.
3. Spectroscopy of Organic Compounds-3rd Ed.-P.S. Kalsi (New Age, New Delhi) 2000.
4. E.A.V. Ebsworth, D.W.H. Ranklin and S. Cradock: Structural Methods in Inorganic Chemistry, Blackwell Scientific, 1991.
5. J. A. Iggo: NMR Spectroscopy in Inorganic Chemistry, Oxford University Press, 1999.
6. C. N. R. Rao and J. R. Ferraro: Spectroscopy in Inorganic Chemistry, Vol I & II (Academic) 1970.
7. Spectroscopy, B. P. Straughan and S. Salker, John Wiley and Sons Inc., New York, Vol.2, 1976.
8. Application of Absorption Spectroscopy of Organic Compounds, John R. Dyer, Prentice/Hall of India Private Limited, New Delhi, 1974.
9. Organic Spectroscopy, V. R. Dani, Tata McGraw-Hall Publishing Company Limited, New Delhi. 1995.
10. Interpretation of Carbon-13 NMR Spectra, F.W. Wehrli and T. Wirthin, Heyden, London, 1976.
11. NMR spectroscopy-Powai

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	1	2	2	2	2	2	2
CO2	3	1	2	1	2	2	2	2	2
CO3	3	1	2	2	2	2	1	2	2
CO4	3	1	2	1	2	2	2	2	2
CO5	3	1	2	2	2	2	2	2	2
Weighted Average	3	1.2	1.8	1.6	2	2	1.8	2	2

SOFT CORE
PRACTICALS

CHA SCP: 3.1/4.1. ANALYTICAL CHEMISTRY PRACTICALS-II

[64 HOURS]

Objectives:

- To familiarize with the handling of instruments in the quantitative analysis of various samples.
- To understand the analysis of real samples like waste water, soil samples and biological samples and mixtures

Course Outcomes:

After studying this course, the student to:

- Get experience on analysis of various complex mixtures by following multistep reactions.
- Acquire the knowledge on handling instruments and to overcome the general problems arises during the analysis.
- Acquire industrial skills required for sampling, analytical and interpretation and presentation of results.
- Possess adequate knowledge on literature search for developed analytical methods.

Pedagogy:

- Each student performs experiments as per the protocol in practical classes.
- Computer aided applications are used for the evaluation of experimental results.

Course experiments

PART – A

1. Determination of calcium in limestone by redox, acid-base and complexation titrations.
2. Determination of vitamin C in orange juice by titration with cerium(IV) and with 2,6-dichlorophenol indophenol.
3. Determination of aluminium and magnesium in antacids by EDTA titration.
4. Analysis of a copper-nickel alloy sample for copper and nickel by EDTA titration using masking and selective demasking reactions.
5. Determination of saccharin in tablets by precipitation titration.
6. Determination of ascorbic acid in goose berry/bitter gourd by titrimetry and spectrophotometry using *N*-bromosuccinimide (NBS).
7. Analysis of a mixture of iron(II) and iron(III) by EDTA titration using *p*H control.
8. Determination of sulpha drugs by potentiometry using $NaNO_2$ and iodometric assay of penicillin.
9. Polarographic determination of copper and zinc in brass.
10. Determination of sodium, potassium and calcium in mineral waters by atomic emission spectrometry.
11. Determination of iron in mustard seeds and phosphorus in peas by spectrophotometry.
12. Determination of ethanol in wine by titrimetric and spectrophotometric dichromate methods.

PART –B

1. Analysis of waste waters for DO and COD by titrimetry.
2. Analysis of a ground water sample for sulphate by titrimetry (EDTA) and turbidimetry.
3. Potentiometric determination of formula and stability constant of a silver-ammonia complex ion.
4. Determination of aspirin, phenacetin and caffeine in mixture and APC tablets by solvent extraction and UV spectrophotometry.
5. Kinetic determination of urinary creatinine and purity of a commercial H_2O_2 sample.
6. Determination of chromium(III) and iron(III) in a mixture by kinetic masking methods.
7. Photometric and potentiometric titration of iron(III) with EDTA.
8. Photometric and potentiometric titration of copper with EDTA.
9. Analysis of brackish water for chloride content by a) spectrophotometry (mercuric thiocyanate method), b) conductometry (silver nitrate) and c) potentiometry (silver nitrate).
10. Conductometric titration of sodium acetate with HCl and NH_4Cl with NaOH.
11. Ascorbic acid determination in natural orange juice by coulometry.
12. Analysis of waste water for
    a) Phosphate by molybdenum blue method
    b) ammonia-nitrogen by Nessler's method
    c) nitrite-nitrogen by NEDA method
15. Analysis of a soil sample for
    a) Calcium carbonate and organic carbon by titrimetry.
    b) Calcium and magnesium by EDTA titration.
16. Analysis of a soil sample for
    a) Nitrogen content by Kjeldahl method
    b) Available phosphorus by spectrophotometry.
    c) Nitrate-nitrogen/nitrite nitrogen/ammonia nitrogen by spectrophotometry.
    d) Sodium and potassium by flame photometry.
17. Analysis of urine for
    a) Urea and uric acid by titrimetrysnd spectrophotometry.
    b) Sulphate by precipitation titration after ion-exchange separation.
    c) Sugar by Benedict's reagent.
18. Analysis of blood for
    a) Cholesterol by spectrophotometry
    b) Bicarbonate by acid-base titration.

References

1. Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch 8thedition, 2005, Saunders College Publishing, New York.
2. Analytical Chemistry, G.D. Christian, 5th edition, 2001 John Wiley & Sons, Inc. India.
3. Quantitative Analysis, R.A. Day and A.L. Underwood, 6th edition, 1993, prentice Hall, Inc. New Delhi.
4. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D.Barnes and M.J.K. Thomas, 6th edition, Third Indian Reprint, 2003 Pearson Education Pvt. Ltd., New Delhi.

5. Analytical Chemistry Principles, John H. Kennedy, 2nd edition, Saunders College Publishing, California, 1990.
6. Quantitative Analysis of Drugs in Pharmaceutical Formulations, P. D. Sethi, 3rdedition, CBS Publishers & Distributors, New Delhi, 1997.
7. Practical Clinical biochemistry methods and interpretations, R. Chawla, J.P. Bothers Medical Publishers (P) Ltd., 1995.
8. Laboratory Manual in Biochemistry, J. Jayaraman, New Age International Publishers,New Delhi, 1981.
9. Experiments on Water Pollution, D.I.Williams and D. Anglesia, Wayland Publishers Ltd., England, 1978.
10. Experiments on Land Pollution, D.I. Williams and D. Anglesia, Wayland Publishers Ltd., England, 1978.
11. Experiments in Environmental Chemistry, P.D. Vowler and D.W. Counel, Pergamon Press, Oxford 1980.
12. Manual Soil Laboratory Testing, vol.I, K.H. Head, Pentech Press, London 1980.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	1	2	2	2	2	2	2
CO2	3	2	2	1	2	2	2	2	2
CO3	3	2	2	2	2	2	1	2	2
CO4	2	2	2	2	2	2	2	1	2
Weighted Average	3	2	1.75	1.75	2	2	1.75	1.75	2

CHI SCP: 3.2/4.2. INORGANIC CHEMISTRY PRACTICALS -II

[64 HOURS]

Objectives:

- To familiarize with the instrumental methods of analysis for determining metals present in the different samples.
- To familiarize with the preparation and characterization of different inorganic complexes.

Course outcome:

- Determination of alloy samples and understanding the electrochemical deposition of metals.
- Preparation and characterization of coordination compounds.
- Determination of composition, stability constant and magnetic susceptibility of metal complexes.

Pedagogy:

- Each student performs experiments as per the protocol in practical classes.
- Spectroscopic tools are applied for the characterization of the synthesized complexes.

Course experiments

PART-A

1. Determination of bismuth, cadmium and lead in a mixture: Analysis of a low melting alloy (Wood's alloy).
2. Simultaneous spectrophotometric determination of chromium and manganese in a steel solution.
3. Determination of chromium(III) and iron(III) in a mixture: Kinetic masking method.
4. Electrogravimetric determination of:
   a) Copper in copper sulphate
   b) Nickel in nickel suphate
   c) Copper and nickel in alloy solution
   d) Lead in lead nitrate.
5. Flame photometric determination of the following metal ions from different samples:
   a) Sodium b) potassium and c) sodium and potassium in a mixture.
6. Polarographic estimation of cadmium and zinc.
7. Determination of iron as the 8-hydroxyquinolate by solvent extraction method.
8. Quantitative determination of nickel using dithizone and 1,10-phenanthroline by synergistic extraction.
9. Spectrophotometric determination of the *p*Ka value of methyl red.
10. Semimicro gravimetric determination of aluminium.

PART-B

1. Preparation and characterization of:
   a) Chloropentammine cobalt(III) chloride
   b) Estimation of chloride in a complex by potentiometric or ion-exchange method
   c) Record the electronic absorption spectrum of a complex and verify Tanabe Sugano diagram.
2. Preparation of *cis*- and *trans*- dichlorobis(ethylenediammine) cobalt(III)chloride. Record the UV-Vis spectra and compare it with *cis*-form. Measure the molar conductance.
3. Preparation of hexammine cobalt(III) chloride and estimate cobalt ion.
4. Determination of magnetic susceptibility of any two compounds/complexes by Gouy method.
5. Determination of the composition of iron-phenanthroline complex by:
   (a) Job's method
   (b) mole-ratio method and
   (c) Slope-ratio method.
6. Determine the stability constant of iron-tiron/iron-phenanthroline by Turner-Anderson method.
7. Preparation of potassium tris(oxalato)ferrate(III) and estimate the metal ion.
8. Preparation of acetyl acetonatomanganese(III) complex.
9. Preparation of tris(en)nickel(II) chloride and hexamine nickel(II) chloride complexes. Record electronic spectra and evaluate spectrochemical series.
10. Using chloropentammine cobalt(III) chloride, prepare nitro and nitritopentammine cobalt(III) chloride. Record the IR spectra of the isomers and interpret.
11. Estimate the chloride ion in a given complex by silver nitrate titration after ion-exchange separation.
12. Demonstration Experiments:
    (a) Recording and interpretation of IR and NMR spectra of complexes.
    (b) Spectrochemical series- Evaluation of Dq value.
    (c) DNA interaction with metal complexes by UV-visible absorption and viscosity methods.

References

1. Advanced Physico-Chemical Experiments – J. Rose.
2. Instrumental Analysis Manual - Modern Experiments for Laboratory – G.G. Guilbault and L.G. Hargis.
3. A Text Book of Quantitative Inorganic Analysis – A.I. Vogel, 5th edition.
4. Experimental Inorganic Chemistry – G. Palmer.
5. Inorganic Synthesis – O. Glemser.
6. Experimental Inorganic/Physical Chemistry- Mounir A. Malati.
7. Quantitative Chemical Analysis – Daniel C. Harris, (2006) 7th edition.
8. Spectrophotometric Determination of Elements – Z. Marczenko.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	3	2	2	2	2	2	2	2
CO2	2	3	2	1	2	1	2	2	2
CO3	2	3	2	2	2	2	2	2	2
Weighted Average	2	3	2	1.66	2	1.66	2	2	2

CHO SCP: 3.3/4.3. ORGANIC CHEMISTRY PRACTICALS- II

[64 HOURS]

Objectives:

- To understand the concepts of isolation and purification of natural products.
- To familiarize with the estimation of different functional groups in organic compounds.

Course outcome:

- The isolation of caffeine, carotene, lycopene, cincole, azelaic acid and piperine from respective natural sources.
- Estimation of ketones, sugars, nitro and amino groups in natural products.
- Interpret UV, IR, NMR and MS data of different organic compounds.

Pedagogy:

- Each student performs experiments as per the protocol in practical classes.
- Spectroscopic tools are applied for the characterization of isolated natural products.

Course experiments

PART-A

1. Fractional crystallization: separation of mixture of naphthalene and biphenyl.
2. Thin layer chromatography: Separation of plant pigments.
3. Column chromatography: Separation of *o*- and *p*-nitro aniline
4. Isolation of piperine from pepper.
5. Isolation of caffeine from tea.
6. Isolation of azelaic acid from castor oil.
7. Isolation of carotene from carrot.
8. Isolation of lycopene from tomato.
9. Isolation of cincole from eucalyptus leaves.

PART-B

Isolation of natural products & estimations:

1. Estimation of ketones by haloform reaction.
2. Estimation of sugars by Bertrand's method.
3. Estimation of nitro groups.
4. Estimation of amino group.
5. Determination of enol content by Meyer's method.
6. Determination of iodine value of an oil or fat.
7. Determination of saponification value of oil.
8. Determination of equivalent weight of carboxylic acid by silver salt method

Interpretation of Spectra: Structural elucidation of some simple organic compounds by UV, IR, NMR and mass. Spectra have to be provided by the Teachers/ Examiners.

References

1. Vogel' text book of practical organic chemistry, V edition, B. S. Furniss, A. J. Hannaford, P. W. G. Smith, A. R. Tatehell.
2. Elementary practical organic chemistry, Part-III: Quantitative organic analysis, By Arthur I, Vogel.
3. Laboratory manual of Organic Chemistry by B. B. Dey and M. V. Sitaraman.
4. Practical Organic Chemistry by Mann F. G. and Saunders.
5. Natural products: A laboratory guide by Raphael Ikhan.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	1	1	2	2	2	2	2	2
CO2	2	1	2	1	2	1	1	2	2
CO3	2	1	2	1	2	2	1	2	2
Weighted Average	2	1	1.66	1.33	2	1.66	1.33	2	2

CHP SCP: 3.4/4.4. PHYSICAL CHEMISTRY PRACTICALS-II

Objectives: **[64 HOURS]**

- To understand the significance of various factors influencing the reaction rate in proposing the reaction mechanism.
- To understand electrochemical and spectrophotometric methods of quantification of samples, and also determination of physico-chemical parameters of some important samples.

Course outcome:

- Students can able to develop experimental skill and interpretation of plausible mechanisms of reactions.
- Gain practical knowledge on the theoretical basis of electrochemistry, thermodynamics, and spectrophotometry experiments.
- This helps in academics, research and industries.

Pedagogy:

- Each student performs experiments as per the protocol in practical classes.
- Electrochemical and spectrophotometric tools are used to conduct the experiments.

Course experiments

PART-A

1. Determination of order of reaction for the acid hydrolysis of methyl acetate and evaluation of activation parameters.
2. Evaluation of Arrhenius parameters for the reaction between $K_2S_2O_8$ and KI (First order reaction).
3. Study of kinetics of autocatalytic reaction between oxalic acid and $KMnO_4$ and determine the order of reaction with respect to $KMnO_4$.
4. Kinetics of saponification of ethyl acetate by conductivity method and study the effect of dielectric constant of the medium (using CH_3OH).
5. Study of effect of salt (ionic strength) on the kinetics of reaction between potassium persulphate and potassium iodide (second order reaction).
6. Spectrophotometric kinetics of oxidation of indigocarmine (IC) by chloramine-T (CAT) – Determination of order of reaction with respect to [CAT] and [IC].
7. To study the acid catalysed kinetics of oxidation of glycine by chloramine-T (CAT) - determination of order of reaction with respect to [CAT] and [glycine].
8. Study the phase diagram of three component system (Glacial acetic acid-Chloroform-water system / Glacial acetic acid-Acetone-Water system).
9. Study the rate of corrosion and inhibition efficiency of an inhibitor (thiourea) on mild steel/Al/Cu by weight loss method.

PART-B

1. Conductometric titration of orthophosphoric acid against NaOH.
2. Conductometric titration of a mixture of HCl, CH_3COOH and $CuSO_4$ against NaOH.
3. Conductometric titration of thorium nitrate with potassium tartarate.
4. Potentiometric titration of mixture of weak acids (acetic acid and monochloroacetic acid) against NaOH.
5. Dwtermination of pK_a values of phosphoric acid by potentiometric / pH metric method.
6. Potentiometric titration of mixture of KCl+KBr+KI against $AgNO_3$.
7. Potentiometric titration of FAS against ceric sulphate and sodium metavenadate, determine the concentration of FAS and redox potential.
8. Potentiometric titration of lead nitrate against EDTA and determine the concentration of lead nitrate solution.
9. Determination of *p*K value of an indicator (methyl orange/methyl red).
10. Spectrophotometric analysis of a mixture of (a) $KMnO_4$ and $K_2Cr_2O_7$.
11. Study of complex formation between ferric salt and salicylic acid.

References

1. Practical Physical Chemistry – A.J. Findlay.
2. Experimental Physical Chemistry – F. Daniels *et al*.
3. Selected Experiments in Physical Chemistry – Latham.
4. Experiments in Physical Chemistry – James and Prichard.
5. Experiments in Physical Chemistry – Shoemaker.
6. Advanced Physico-Chemical Experiments – J. Rose.
7. Practical Physical Chemistry – S.R. Palit.
8. Experiments in Physical Chemistry – Yadav, Geol Publishing House.
9. Experiments in Physical Chemistry – Palmer.
10. Experiments in Chemistry – D.V. Jahagirdar, Himalaya Publishing House, Bombay, (1994).
11. Experimental Physical Chemistry – R.C. Das and B. Behera, Tata Mc Graw Hill.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	1	2	2	2	2	2	2	2
CO2	2	1	2	2	1	2	2	2	2
CO3	2	1	2	2	2	2	1	2	2
Weighted Average	2	1	2	2	1.66	2	1.66	2	2

SOFT CORE PAPERS

CHA SCT: 3.1. ELECTROCHEMICAL METHODS OF CHEMICAL ANALYSIS

Objectives:

- To learn aspects of kinetic and radiochemical methods for analysis
- To understand the knowledge of applied aspects of recent needs by simple techniques

Course Outcome:

- To understand the reaction kinetics
- To gain the principles of radiochemical methods
- To understand the applicability of radiometric assays

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and information and communications technology are used in class room teaching.
- Students will be assigned to solve the numerical problems to understand electrochemical concepts.

Course content

UNIT-I

[16HOURS]

Introduction to electrochemical methods and types: Definitions-electrochemical, galvanic and electrolytic cells, half-cell reactions, anode and cathode, reversible cell, standard hydrogen electrode (SHE), electrode potential (E), standard electrode potential (E^0), theoretical cell potential, liquid junction potential, ohmic drop, IR, overvoltage, concentration over potential.

Activity-dependence of electrode potentials- the Nernst equation, reference electrode-calomel and Ag-AgCl electrodes.

Potentiometry: Electrode systems, metallic indicator electrodes. Membrane electrodes, Ion-selective electrodes-electrode response and selectivity of glass electrode for pH measurement, errors in the use of glass electrode. Glass electrodes for the measurement of cations other than hydrogen - Solid state electrodes, liquid membrane electrodes. Ion-selective field effect transistors(ISFETS).Gassensingelectrodes.Directpotentiometry:Chemicalandenvironmental applications. Potentiometric biosensors. Potentiometric titrations- acid-base, precipitation and redox titrations. Null-point potentiometry.

Coulometric methods of analysis: Basis, Faraday's law and current efficiency. Characterizing coulometric methods. Controlled-potential coulometry- selecting a constant potential, minimising electrolysis time. Instrumentation and applications. Characterisation applications: determining the number of electrons involved (n) in a reaction. Controlled-current coulometry- minimising current efficiency, detecting the end point.

Instrumentation: current sources and cells. Comparing conductometric and conventional titrations. Applications. Automated coulometric titrations.

UNIT-II

[16HOURS]

Electrogravimetricanalysis: Theory, applications, cellprocesses, deposition and separation, electrolytic separation of metals, applications

Voltammetry and polarography: Introduction. Electrodes. Polarographic principles- polarographic current, polarographic potential, polarographic maxima, oxygen removal. Qualitative and quantitative analyses. AC polarography. Pulse polarography. Differential pulse polarography and square wave polarography. Trace analysis by pulse polarography. Inorganic, organic, clinical and environmental applications. Characterisation applications- electrochemical reversibility and determination of _n'. Determination of equilibrium constants for coupled chemical reactions. Voltammetric principles- Voltammetry at solid electrodes- hydrodynamic voltammetry,triangularvoltammetryorcyclicvoltammetry.Modifiedelectrodes.Amperometry, amperometric titration. Biamperometry.

Stripping methods-anodic and cathodic stripping methods. Electrodeposition step and voltammetric deposition step. Applications of stripping methods. Voltammetry with micro electrodes.

Chemical sensors and biosensors: Sensors, electrochemical sensors, optical sensors, thermal and mass-sensitive sensors, sensor arrays.

References

1 Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch 8thedition, 2005, Saunders College Publishing, New York.
2 Analytical Chemistry, G.D.Christian, 5thedition, 2001JohnWiley & Sons, Inc.India.
3 Quantitative Analysis, R.A. Day and A.L. Underwood, 6th edition, 1993 Prentice Hall,Inc. New Delhi.
4 Vogel‘s Text book of Quantitative Chemical Analysis, J.Mendham, R.C.Denney,J.D.
5 Barnes and M.J.K. Thomas, 6th edition, Third Indian Reprint, 2003 Pearson Education Pvt. Ltd., New Delhi.
6 Analytical Chemistry Principles, John H.Kennedy, 2ndedition, Saunders College Publishing, California, 1990.
7 Instrumental Methods of Analysis by H.H.Willard, L.L.Merrittand J.A.Dean, 7th Edition, CBS Publishers, New Delhi, 1988.
8 Principles and Practice of Analytical Chemistry, F.W. Fifield and Kealey, 3rdedition, 2000, Blackwell Sci., Ltd. Malden, USA.
9 Modern Analytical Chemistry, David Harvey, McGraw Hill, NewDelhi, 2000.
10 Introduction to Instrumental Analysis, Braun, Pharm. Med.Press. India.
11 Instant Notes of Analytical Chemistry, Kealey and Haines, Viva Books Pvt. Ltd., NewDelhi, 2002.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	2	1	1	2	2	2	3	2
CO2	2	2	1	1	1	1	2	3	2
CO3	1	2	1	1	2	1	2	3	2
Weighted Average	1.66	2	1	1	1.66	1.33	2	3	2

CHI SCT: 3.2. FRONTIERS IN INORGANIC CHEMISTRY

Objectives:

- To understand the basic concepts, synthesis and applications of materials.
- To learn the properties, fabrication and characterization of nanomaterials.

Course Outcome:

- Gain knowledge on design and synthesis of new inorganic materials.
- Fabrication and characterization of nanomaterials.
- Applications of ceramics, pigments, silicates and biomaterials.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Materials chemistry: Historical Perspectives. Design of new materials through a Critical Thinking Approach. Materials sustainability.

Synthesis of materials: The formation of bulk material by different methods.

Defects and ion transport: Extended defects. Atom and ion diffusion. Solid electrolytes. **Metal oxides, nitrides and fluorides:** Monoxides of the 3d metals, higher oxides and complex oxides, oxide glasses, nitrides and fluorides.

Sulfides, intercalation compounds and metal rich phases: Layered MS2 compounds and intercalation, Chevrel phases.

Ceramic materials: Sol-gel process and applications of biomaterials of ceramics.

Inorganic pigments: Coloured pigments, white and black inorganic materials.

Molecular materials and fullerides: Fullerides, Molecular material chemistry.

Silicates: Structure, classification - silicates with discrete anions, silicates containing chain anion, silicates with layer structure, silicones with three dimensional net work and applications.

UNIT-II

[16 HOURS]

Nanomaterials- Introduction. Fundamentals-
Terminology and history.

Characterization and fabrication: Top-down and bottom-up fabrication. Solution based synthesis of nanoparticles. Vapour-phase synthesis of nanoparticles. Templated synthesis of nanomaterials using frameworks, supports and substrates. Sonochemical microwave methods for the synthesis of nanoparticles.

Structural study of nanocomposites by different methods.

Nanostructures and properties

One-dimensional control: carbon nanotubes and inorganic nanowires.

Two-dimensional control: grapheme, quantum wells and solid-state super lattices. Three-dimensional control: mesoporous materials and composites.

Some applications of inorganic/organic/polymeric materials: Optical, electrical, magnetic, and chemical and biosensors.

References

1. Inorganic Chemistry, 4th edition. P. Atkins, T. Overton, J. Rourke, M. Weller and F. Armstrong, Oxford University Press (2006).
2. Inorganic Chemistry Principles of Structure and Reactivity: James E. Huheey, Ellen A. Keiter, Richard L. Keiter, Okhil K. Medhi, Delhi University, New Delhi (2006).
3. Chemistry of the Elements – N.N. Greenwood and A. Earnshaw, Pergamon Press (1985).
4. Industrial Inorganic Chemistry – 2nd edition. K.H. Buchel, H.H. Moretto and P. Woditsh, Wiley - VCH (2000).
5. Basic Inorganic Chemistry – 3rd edition. F.A. Cotton, G. Wilkinson and P.L. Gaus, John Wiley and Sons (2002).
6. Inorganic Chemistry, 3rd edition. James E. Huheey, Harper and Row Publishers (1983).
7. Inorganic Chemistry, 3rd edition. G.L. Miessler and D.A. Tarr, Pearson Education (2004).
8. Inorganic Chemistry, 2nd edition. C.E. Housecroft and A.G. Sharpe, Pearson Education.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	2	2	2	2	2	2	1	2
CO2	1	2	1	2	1	2	2	1	2
CO3	2	2	1	2	2	2	2	1	2
Weighted Average	1.66	2	1.33	2	1.66	2	2	1	2

CHO SCT: 3.3. CHEMISTRY OF NATURAL PRODUCTS-II

Objectives:

- To familiarize with the chemical concepts of alkaloids and steroids.
- To learn the structural elucidation and biological importance of alkaloids and steroids.

Course outcome:

- Chemistry of alkaloids and their biological significances.
- Synthesis and characterization of several alkaloids and steroids.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Alkaloids: Introduction, classification, isolation and general methods of structural elucidation of alkaloids. Classification of alkaloids. Biological importance of alkaloids. Structural elucidation of nicotin, papavarine, quinine, reserpine and morphine. Biosynthesis of alkaloids (nicotin, conine and cocaine).

UNIT-II

[16 HOURS]

Steroids: Introduction, Structural elucidation of cholesterol, bile acids, Ergosterol and its irradiation products. Sex hormones and corticosteroids: Synthesis of estrone, progesterone, androsterone, testosterone. Barton reaction for the synthesis of aldosterone. Brief discussion of homosteroids, norsteroids and oral contraceptives. Biological significance of anabolic steroids.

References

1. Organic Chemistry, VI edition, Robert T. Morrison, Robert N. Boyd.
2. Organic Chemistry, Vol-II by I. L. Finar.
3. Schaum's outline of theory and problems of Organic Chemistry, Harbert Meislich, Howard Nechamkin and Jocob Sharefkin.
4. Natural products: Their chemistry and biological significance, J. Mann, R. S. Davidson, J. B. Banthorpe and J. B. Harborne.

Course Articulation Matrix

POs / Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	1	2	2	2	2	2	3	2
CO2	2	1	2	1	1	1	2	3	2
Weighted Average	2	1	2	1.5	1.5	1.5	2	3	2

CHP SCT: 3.4. MATERIALS CHEMISTRY

Objectives:

- To familiarize with the preparation and characterization of different types of nanomaterials.
- To learn the properties and applications of semiconductors and superconductors.

Course outcome:

- Understand the fundamentals and importance of different types of nanomaterials, their methods of preparation and characterization by different techniques.
- Basic aspects of semiconductors and superconductors, their properties and applications.

Pedagogy

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Chemistry of nanomaterials: Fundamentals and importance, metal nanoclusters, magic numbers, theoretical modelling of nanoparticles, geometric structure, electronic structure, reactivity, fluctuations, magnetic clusters, bulk to nano transitions. Semiconducting nanoparticles: optical properties, photo fragmentation, Coulombic explosion.

Carbon nanoparticles: Introduction, carbon molecules, nature of carbon bond, new carbon structure. Carbon clusters: Small carbon clusters, C_{60}: Discovery, structure, alkali doping, super conductivity. Fullerenes and other bulky balls. Carbon nano-tubes: Fabrication structure, electrical properties, vibrational properties, mechanical properties. Quantum dots, Graphene, and applications of nanomaterials.

Methods of preparation: Plasma arc, Chemical vapour deposition (CVD), sol-gel, silica-gel, hydrolysis, condensation, polymerization of monomers to form nanoparticles, solvothermal, and hydrothermal methods, electrochemical, ball milling and pulsed laser methods. Characterization of nanomaterials (X- ray, IR, UV and SEM).

UNIT-II

[16 HOURS]

Semiconductors: Metals, insulators and semiconductors. Band theory, energy bands, intrinsic and extrinsic semiconductors. Conductivity: electrons and holes, temperature dependence on conductivity, Optical properties: absorption spectrum, photoconductivity, photovoltaic effect and luminescence. Junction properties: metal-metal junctions, metal-semiconductor junctions, p- n junctions, transistors, industrial applications of semiconductors: Mixed oxides, spinels and other magnetic materials.

Superconductors: Introduction, critical temperature and zero resistivity, Meissner effect, critical magnetic field and its variation with temperature. Type - I and II super conductors, specific heat, isotope effect, basic concepts of BCS theory. High temperature (Tc) superconductors and its applications.

References

1. Introduction to Nanotechnology, Charles P. Poole. Jr. and Frank J. Owens, Wiley- Interscience, Joh Wiley and Sons Inc, 2006.
2. Nanotechnology, Richard Booker and Earl Boysen, Wiley.
3. Nanometerials, A.K. Bandopadhyay, New Age International, 2nd edition.
4. Nanotechnology - Importance and Applications, M. H. Fulekar, Ink International publishing.
5. Solid State Chemistry – N.B. Hannay.
6. Introduction to Solids – Azaroff.
7. Solid State Chemistry and its applications – A.R. West.
8. Principles of the Solid State – H.V. Keer.
9. Basic Solid State Chemistry, 2nd edition, Anthony R. West.
10. Solid State Chemistry: An Introduction, 3rd edition, Lesley E. Smart and Elaine A. Moore.
11. Introduction to Solid state Physics-C. Kittel, 5th edition, Wiley Eastern, Limited.
12. C.N.R. Rao and J. Gopalakrishna –New Directions in solid state chemistry| Cambridge University Press, Cambridge (1999).

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	1	2	2	2	2	2	2	2
CO2	2	1	2	1	1	1	2	2	2
Weighted Average	2	1	2	1.5	1.5	1.5	2	2	2

FOURTH SEMESTER
HARD CORE PAPERS
CHI HCT: 4.1. BIOINORGANIC CHEMISTRY

Objectives:

- To understand the structural parameters of metallo-proteins and their biological role.
- To learn the biological properties of metal complexes in chemo and radio therapeutics.

Course outcome:

- Structural building blocks of proteins, nucleic acids and their metal ion interactions. Biological role of Na/K channel, Ca, Vit B12, and coenzymes.
- Biochemical reactions of several metallo-enzymes and oxygen transport proteins.
- Medicinal applications of metals and metal complexes, and also treatment of toxicity due to heavy metal ions.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Structural and molecular biology: Introduction, The structural building blocks of proteins, the structural building block of nucleic acids. Metal ion interactions with nucleosides and nucleotides. General features of DNA - metal complex interaction.

Bioenergetics: Introduction, Redox reactions in metabolism, the central role of ATP in metabolism. Kinetic stability of ATP, Mitochondrial flow of electrons from NADH to O_2. Phosphorylation and respiratory chain. Oxidative phosphorylation.

Sodium and potassium-channels and pumps: Introduction, transport across membranes. Potassium and sodium channels, The sodium-potassium ATPase, Macrocyclic crown ether compounds, cryptands and ionophores.

Biochemistry of calcium: Introduction - comparison of Ca^{2+} and Mg^{2+}. Biological roles of calcium, binding sites of calcium and proteins, storage of calcium, calcium in muscle contraction, calcium in blood clotting process.

Vitamin B12 and Coenzymes: Structural feature, names of different forms, chemistry of cobalamin, biochemical functions of cobalamins, model compounds. Special characteristics of B12 co-enzyme. Photosystems.

UNIT-II

[16 HOURS]

Metal ion transport and storage: Iron storage and transport: Transferrin, ferritin, phosvitin and gastroferrin. Iron transport in microbes: siderophores, *in vivo* microbial transport of iron.

Oxygen transport and oxygen uptake proteins: Properties of dioxygen (O2): thermodynamic and kinetic aspects of dioxygen as an oxidant, activation of dioxygen through complexation with metal ions. Haemoglobin (Hb) and Myoglobin (Mb) in oxygen transport mechanism: Introduction to porphyrin system, substituent effects on porphyrin rings, functions of Hb and Mb. Characteristics of O_2^--binding interaction with Hb and Mb. Model compounds for oxygen carriers (Vaska's complex and cobalt(III) – Schiff base complexes). Hemerythrin and hemocyanin.

Electron transport proteins and redox enzymes: Iron – sulfur proteins (rubredoxins and ferredoxins) and cytochromes including cytochrome P450. Catalase and peroxidase: Structure and reactivity. **Superoxide dismutase**: Structure and reactivity.

Molybdenum containing enzymes: Aspects of molybdenum chemistry, Xanthine oxidase, aldehyde oxidase, sulfite oxidase, nitrogenase and nitrite reductase.

Non-redox metalloenzymes - Structure and reactivity: Carboxypeptidase-A, alcohol dehydrogenase, leucineaminopeptidase and carbonic anhydrase.

UNIT-III

[16 HOURS]

Medicinal Inorganic Chemistry: State of the Art, New Trends, and a Vision of the Future: Introduction, metals and human biochemistry, general requirements.

Disease due to metal deficiency and treatment: Iron, zinc, copper, sodium, potassium, magnesium, calcium and selenium.

Metal complexes as drugs and therapeutic agents: Introduction, Antibacterial agents, Antiviral agents, **Cancer Therapy**: Current Status and Mechanism of Action of Platinum-Based Anticancer Drugs. Non-platinum anticancer agents.

Gold-Based Therapeutic Agents: **A New Perspective**: Uses for the treatment of rheumatoid arthritis, **Diabetes**: Vanadium and diabetes,

Metal-Based Radiopharmaceuticals: Metal complexes as radio diagnostic agents.

Treatment of toxicity due to inorganics: General aspects of mechanism of metal ion toxicity,

(i) Mechanism of antidote complex with poison, rendering it inert: arsenic, lead, mercury, iron and copper.

(ii) Antidote accelerated metabolic conversion of poison to non-toxic product: cyanide and carbon monoxide.

References

1. The Inorganic Chemistry of Biological Process- 2nd edition, M. N. Hughes, John Wiley and Sons, (1988).
2. Bioinorganic Chemistry - R.W. Hay, Ellis Horwood Ltd., (1984).
3. Biological Inorganic Chemistry – An Introduction, R.R. Crichton, Elsevier, (2008).
4. Bioinorganic Chemistry - A.K. Das, Books and Allied (P) Ltd, (2007).
5. Bioinorganic Chemistry - K. Hussain Reddy, New Age International Ltd. (2003).
6. Bioinorganic Chemistry: A Survey - EiichiroOchiai, Academic Press, (2008).
7. Bioinorganic Chemistry: A Short Course - 2nd edition, R.M. Roat-Malone, Wiley Interscience, (2007).
8. Medicinal Applications of Coodination Chemistry - Chris Jones and John Thornback, RSC Publishing, (2007).
9. Transition Metal Complexes as Drugs and Chemotherapeutic Agents - N. Farrell, Kluwer Academic Publishers (1989).
10. The Biological Chemistry of the Elements: The Inorganic Chemistry of Life - 2nd edition, J.J.R. Frausto da Silva and R.J.P. Williams, Oxford University Press, (2001).
11. Essentials of Inorganic Chemistry, K. A. Strohfeldt, John Wiley and Sons Ltd.,(2015).
12. Bioinorganic Medicinal Chemistry (Ed) EnzoAlessio, Wiley-VCH Verlag and Co., (2011).

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	1	1	2	1	2	2	3	2
CO2	2	1	1	2	1	2	2	3	2
CO3	2	1	1	2	2	2	1	3	2
Weighted Average	2	1	1	2	1.33	2	1.66	3	2

Course Articulation Matrix

CHO HCT: 4.2. HETEROCYCLIC AND BIOORGANIC CHEMISTRY

Objectives:

- To familiarize with the chemistry of heterocyclic compounds.
- To learn the synthesis and biological importance of carbohydrates, proteins and nucleic acid.

Course Outcome:

- Structure, reactivity and synthesis of several heterocyclic compounds.
- Synthesis, industrial and biological importance of carbohydrates.
- General synthesis of amino acids, peptides, nucleic acids and their biological significance.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Heterocyclic compounds: Nomenclature; Structure, reactivity, synthesis and reactions of furan, pyrrole, thiophene, indole, pyridine, quinoline, isoquinoline, pyrazole, imidazole, pyrone, coumarin, chromones, pyrimidines, purines. Synthesis and synthetic applications of azirines & aziridines, oxazolines, , isoxazole, triazole and azepines.

UNIT-II

[16 HOURS]

Carbohydrates: Introduction, Ring size determination of monosaccharides, configuration and conformations of monosaccharides, anomeric effect, Hudson‘s rules, epimerization and mutarotation. Synthesis, industrial and biological importance of glycosides, amino sugars, sucrose, maltose and lactose. Polysaccharides: General methods of structure elucidation. Industrial importance and biological importance of cellulose, starch, glycogen, dextran, hemicellulose, pectin, agar- agar. Photosynthesis and biosynthesis of carbohydrates.

UNIT-III

[16 HOURS]

Amino Acids: General structure, physiological properties, protection of functional groups. **Peptides**: Structure and conformation of peptide bond, peptide synthesis: Solution phase and Merrifield’s solid phase synthesis, Racemization and use of HOBt, Synthesis of oxytocin and vasopressin, biological importance of insulin, selective cleavage of polypeptide bonds (chemical and enzymatic). Proteins: Structure determination: *C* and *N* terminal residue determination, primary, secondary, tertiary and quaternary structure determination, denaturing and renaturing of proteins.

Nucleic acids: Introduction, structure and synthesis of nucleosides and nucleotides, protecting groups for hydroxy group in sugar, amino group in the base and phosphate functions. Methods of formation of internucleotide bonds: DCC, phosphodiester approach and phosphoramide methods. Solid phase synthesis of oligonucleotides. Structure of RNA and DNA, Crick-Watson model, role of nucleic acids in the biosynthesis of proteins.

Protecting groups: Protection of hydroxyl, carboxyl, carbonyl, thiol and amino groups. Illustration of protection and deprotection in synthesis.

References

1. Organic Chemistry, VI edition, Robert T. Morrison, Robert N. Boyd.
2. Organic Chemistry, Vol-II by I. L. Finar.
3. Schaum's outline of theory and problems of Organic Chemistry, Harbert Meislich, Howard Nechamkin and Jocob Sharefkin.
4. Natural products: Their chemistry and biological significance, J. Mann, R. S. Davidson, J. B. Banthorpe and J. B. Harborne.
5. A text book of synthetic drugs, O. D. Tyagi and M. Yadav.
6. Synthetic drugs, Gurdeep R. Chatwal.
7. Carbohydrate Chemistry and applications of carbohydrates, K. M. Lokanatha Rai.
8. Heterocyclic chemistry by Achison.
9. Heterocyclic chemistry by Smith and Joule.
10. Heterocyclic chemistry by Pacquete.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	1	2	2	2	2	2	2	2
CO2	1	2	2	2	2	2	2	2	1
CO3	2	1	2	2	2	1	2	2	2
Weighted Average	1.66	1.33	2	2	2	1.66	2	2	1.66

CHP HCT: 4.3.
NUCLEAR, RADIATION AND PHOTOCHEMISTRY

Objectives:

- To understand the theory and applications of photochemistry.
- To learn the fundamentals and physico-chemical applications of radiation chemistry.
- To familiarize with the concepts of nuclear chemistry including radiochemical separation techniques and nuclear power reactors.

Course outcome:

- Understand the principles of photochemistry, its experimental techniques and applications.
- Fundamentals of radiation chemistry, experimental methods of detection of radiation and applications of radioisotopes.
- General aspects of nuclear chemistry, different types of nuclear reactions, production and separation of radioisotopes and also basic features of different types of nuclear reactors.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Nuclear chemistry: Nuclear stability – nuclear forces, packing fraction, binding energy, liquid drop, shell and collective models. Radioactive decay – General characteristics, decay kinetics, parent – daughter decay growth relationships, determination of half-lives. Brief survey of alpha, beta and gamma decays. Nuclear reactions – Bethe‘s notation, types of nuclear reactions – specific nuclear reactions, photonuclear reactions, Oppenheimer – Phillips process, spallation reactions, Szilard-Chalmers process. Definition of Curie and related calculations. Production of radioisotopes and labelled compounds by bombardment.

Radiochemical separation techniques: carriers, solvent extraction and ion ion-exchange methods.

Nuclear power reactors: Types of nuclear power reactors, basic features and components of nuclear power reactors. An introduction to breeder reactors.

UNIT-II

[16 HOURS]

Radiation chemistry: Introduction, units, interaction of electromagnetic radiation with matter, G-value, LET of radiation. Chemical dosimetry - Fricke and ceric sulphate dosimeters. Radiolysis - cysteine, water and biphenyl. Radioisotopes as tracers, use of isotopic tracers in the elucidation of reaction mechanism, structure determination and solubility of sparingly soluble substances. ^{14}C dating, medical applications of isotopic tracers. Physico-chemical applications – isotope dilution method, activation analysis and radiometric titrations. Hazards in radiochemical work and radiation protection.

Radiation detection and measurement: Experimental techniques in the assay of radioisotopes. Radiation detectors – ionization chambers, proportional and Geiger-Muller counters – G.M. Plateau, dead time, coincidence loss, determination of dead time. Scintillation and semiconductor radiation detectors.

UNIT-III

[16 HOURS]

Photochemistry: Introduction to photochemistry, laws of photochemistry, laws of light absorption, quantum yield and its determination, factors affecting quantum yield, Actinometry - Uranyloxalate and potassium ferrioxalate actinometers, acetone and diethylketone actinometers. Term symbols for atoms and its significance. Photochemical properties of electronically excited molecules, nature of changes on electronic excitation, shapes of absorption band and Frank Condon principle. Experimental techniques to determine the intermediates in photochemical reactions. Photosensitization: by mercury, dissociation of H_2. Photochemical kinetics of: Decomposition of CH_3CHO, dissociation of HI and formation of HCl. Fluorescence and phosphorescence – theory and applications. Resonance fluorescence and quenching of fluorescence, Kinetics of colliosional quenching (Stern-Volmer equation).

Photocatalyst – Principle, application of ZnO/TiO_2 photocatalysts in the photo cleavage of dyes, environmentally hazardous waste and industrial effluents. Effect of photo degradation on COD value.

References

1. Photochemistry, Calvert and Pitts, Wiley, New York (1996).
2. Fundamentals of Photochemistry, Gohatgi-Mukherjee, New Age International Ltd., 1986.
3. Principles and Applications of Photochemistry, R. P. Wayne, Elsevier, New York (1970).
4. Photochemistry, Paul Suppan, RSC, London (1994).
5. Introduction to Semiconductor Materials and devices, M. S. Tyagi, John Wiley & Sons, 1991.
6. Nuclear Chemistry by Friedlander and Kennedy, John Wiley and Sons (1987).
7. Essentials of Nuclear Chemistry by H.J. Arnikar, Eastern Wiley (1990).
8. Nuclear Chemistry by U.N. Dash, Sultan Chand and Sons (1991).
9. Fundamentals of Radiochemistry by D.D. Sood, A.V.R. Reddy and N. Ramamoorthy.
10. Nuclear Radiation Detectors by S.S. Kapoor and Ramamoorthy, Wiley Eastern (1986).

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	3	1	2	2	2	2	3	2
CO2	2	3	1	1	2	2	2	3	2
CO3	2	3	1	2	2	2	2	3	2
Weighted Average	2	3	1	1.66	2	2	2	3	2

SOFT CORE PAPERS

CHA SCT: 4.1. AUTOMATED AND METHODS OF CHEMICAL ANALYSIS

Objectives:

- To understand the instrumentation and applications of automated methods of analysis.
- To familiarize with analysis of real samples and clinical analysis.

Course outcome:

- Understand various types of automated methods of analysis.
- Identify activities that can be fully or partially automated.
- Automated chemical analysis will be very helpful in the clinical as well as pharmaceutical field to perform the purity analysis of the sample, although the sample size is very small, expensive and fast analysis.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.
- Students will be assigned numerical problems to understand the concepts.

Course content

UNIT-I

[16 HOURS]

Automated methods of analysis: An overview, definition, distinction between automatic and automated systems, advantages and disadvantages by automation, types of automated techniques. Nondiscrete techniques, segmented flow methods and basic equipment, special techniques and devices, theoretical considerations and problems, applications. Single channel and multi channel auto analysers, BUN analyzers, automatic glucose analyzers and ammonia in water analyzers, COD analyzers, CFA in industry. Non-segmented flow methods: Flow injection analysis. Principles, types of dispersion, factors affecting dispersion, applications of small, medium and large dispersions. Stopped flow methods, flow injection titrations. Discrete methods: Centrifugal fast scan analyzer, automatic multipurpose analyzers, Automatic elemental analyzer, automated analyzer based on multilayer film-principles, film structure, instrumentation applications. Comparison of discrete and non-discrete methods. Advantages of flow injection measurements over continuous flow measurements.

UNIT-II

[16 HOURS]

Analysis of real samples-real sample, choice of analytical method-defining the problem, investigating the literature, choosing or devising a method, testing the procedure, analysis of standard samples, using other methods, standard addition to the sample. Accuracy in the analysis of complex materials.

Decomposing and dissolving the sample- sources of error in decomposing and dissolution. Decomposing samples with inorganic acids. Microwave decomposition. Combustion methods for decomposing organic samples. Decomposition of inorganic materials with fluxes.

Clinical Analysis- Introduction, features of clinical analysis. Composition of blood, collection and preservation of samples. Common determinations - serum electrolytes, blood glucose and blood urea nitrogen, uric acid, albumin and globulins, acid and alkaline phosphates, barbiturates, chloride, sodium and potassium, bicarbonate, serum creatinine and cholesterol. Urine analysis- Principle components. Sample collection and preservation. Determination of creatinine, chloride, uric acid, ammonia, ascorbic acid, bilirubin and calcium.

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	3	2	2	2	2	2	2
CO2	3	2	3	2	2	1	1	2	2
CO3	3	2	3	2	2	2	1	1	2
Weighted Average	3	2	3	2	2	1.66	1.33	1.66	2

References

1. Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch 8th edition, 2005, Saunders College Publishing, NewYork.
2. Analytical Chemistry, G.D. Christian, 5th ed., 2001 John Wiley & Sons, Inc,India.
3. Quantitative Analysis, R.A. Day and A.L. Underwood, 6th edition,1993 prentice Hall, Inc. NewDelhi.
4. Vogel‘s Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney,J.D. Barnes and M.J.K. Thomas, 6th edition, Third Inidan Reprint.2003 PearsonEducation Pvt. Ltd., NewDelhi.
5. Analytical Chemistry Principles, John H. Kennedy, 2nd edition, Saunders College Publishing, California,1990.
6. Principles and practice of analytical chemistry. Fifield andKealey.
7. Instant Notes of Analytical Chemistry, Kealey and Haines, Viva Books Pvt.Ltd.,2002.

Course Articulation Matrix

CHI SCT: 4.2. BIOINORGANIC PHOTOCHEMISTRY

Objectives:

- To understand the photochemistry of inorganic compounds.
- To familiarize with the applications of fluorescents and chromogenic sensing and labeling.
- To learn photodynamic inactivation of microorganisms.

Course outcome:

- Basic concepts of photochemistry and photochemical reactions.
- Understand many organometallic compounds as fluorescent agents in the detection of cations, anions and toxic ions in the living system.
- Theory of photodynamics, and photocatalysis.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16HOURS]

Introduction, Philosophy of bioinorganic photochemistry

Fundamentals: Light and matter. Nature of light, Accessible light sources and Interaction between light and matter.

Formation and properties of electronic excited states: Wave mechanics and quantum numbers and Electronic excitation.

Photophysical deactivation of electronic excited states: Spontaneous deactivation, Quenching and Coordination and organometallic compounds.

Photochemical reactions: Photochemical reaction channels, Intramolecular photoreactions, Photodissociation and photoionization, Photoisomerization, Intermolecular photoreactions, the coordination compound specificity. Ligand field photochemistry, Photochemistry from LC or LLCT states, Inner-sphere charge transfer photochemistry, Outer-sphere charge transfer photochemistry, Photosensitized reactions, Homogeneous photocatalysis.

Natural photo-processes involving inorganic compounds

From interstellar space to planetary atmospheres: Homogeneous systems: from interstellar spacetoplanetaryatmospheresandprimitivesoupmodels.Heterogeneousphotochemistryinice phases.

UNIT-II

[16HOURS]

Applications: Fluorescent and chromogenic sensing and labeling: Cations as targets in biochemical sensing Cations common in biological systems, Fluorescent detection of toxic cations, Fluorescent and chromogenic sensing of anions, Common anions and Toxic anions. Optical detection of neutral molecules. Nanoparticles in biochemical sensing and labeling.

Therapeutic strategies; Photobio-stimulation, Photo-activation of drugs, Photodynamic therapy, Mechanisms of PDT and PTT. Photosensitizers, Inorganic photosensitizers, Supporting role of metal ions in photodynamic therapy, and Combination of polypyrrolic photosensitizers and metallo-pharmaceuticals, Recent PDT development and Nanomedical methods.

Photodynamic inactivation of microorganisms: Bacteria, Viruses, Fungi and Parasites.

Phototoxicity and photoprotection: Chemical and physical photoprotection. Inorganic sunscreens.

Photocatalysis in environmental protection: Development of homo- and heterogeneous methods. Homogeneous photocatalysis and heterogeneous photocatalysis. Water and air detoxification. Other applications of photocatalysis.

References

1. Bioinorganic Photochemistry- Grazyna Stochel, Malgorzata Brindell, Wojciech Macyk, Zofia Stasicka, Konrad Szacilowski. Wiley Publishers (2009).
2. Photochemistry and Photophysics of Coordination Compounds I-Volume Editors: Balzani, V., Campagna, Springer Publications.Vol.280, 2007.
3. Photochemistry and Photophysics of Coordination Compounds II - Volume Editors: Balzani, V., Campagna, Springer Publications.Vol.281, 2007.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	2	2	2	2	2	2	2
CO2	3	1	1	2	1	1	2	2	2
CO3	3	1	1	2	2	2	2	2	2
Weighted Average	3	1	1.33	2	1.66	1.66	2	2	2

CHO SCT: 4.3. MEDICINAL CHEMISTRY

Objectives:

- To familiarize with the methods of isolation, structural elucidation and synthesis of carotenoids and vitamins.
- To learn the basics of medicinal chemistry.
- To understand the synthesis and applications of synthetic drugs.

Course outcome:

- To acquire the knowledge of biological significances of Carotenoids and vitamins.
- Understand the pharmacodynamics, pharmacokinetics and chemotherapy of several drugs.
- Synthesis and mechanism of drug actions of antimalarial, anticancer agents and cardiovascular drugs.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are used in class room teaching.

Course content

UNIT-I

[16 HOURS]

Carotenoids: Methods of isolation. Structure elucidation and synthesis of β-carotene. Structural relationship of α-, β- and γ-carotenes.

Vitamins: Introduction, constitution, synthesis and biological significance of thiamine, riboflavin, pyridoxine, biotin, ascorbic acid, vitamin A1 & A2, E1 and E2 , B12 and K groups.

UNIT-II

[16 HOURS]

Medicinal chemistry: Introduction, pharmacodynamics, pharmacokinetics, chemotherapy, metabolites antimetabolites, agonists and antagonists. Classification of drugs on the basis of therapeutic action. Concept of pro drug and soft drug. Theories of drug activity: Occupancy theory, rate theory, induced fit theory, concept of drug receptors. Evaluation methods: Free- Wilson analysis, Hansch-analysis, ID_{50} and IC_{50} (mathematical derivation of equation excluded). **Antipyretics**: Aspirin, paracetamol, phenacetin, novalgin and their mechanism of action.

Antimalarials: Structure, synthesis and mechanism of action of quinine and chloroquine.

Hypnotics: Analgesics and sedatives: phenoborbitol, chlordiazepoxide, meprobamate.

Stimulants: Structure, action and synthesis of caffeine.

Antineoplastics: Structure, pharmacological action and synthesis of 5-flurouracil, chlorambucil, cyclophosphaminde and podophyllotoxin.

Cardiovascular drugs: Introduction, synthesis of dithiazem, verapamil, methyldopa, atenolol and oxprenolol.

References

1. Organic Chemistry, VI edition, Robert T. Morrison, Robert N. Boyd.
2. Organic Chemistry, Vol-II by I. L. Finar.
3. A text book of synthetic drugs, O. D. Tyagi and M. Yadav.
4. Synthetic drugs, Gurdeep R. Chatwal.
5. Medicinal chemistry by Graham Patrick.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	3	1	2	2	2	2	1	2
CO2	2	3	1	2	2	1	2	1	2
CO3	2	3	1	2	2	2	2	1	2
Weighted Average	2	3	1	2	2	1.66	2	1	2

CHP SCT: 4.4. QUANTUM CHEMISTRY AND BIOSENSORS

Objectives:

- To understand the applications of quantum mechanics to HMO theory.
- To learn the basics of biosensors and their applications.

Course outcome:

- Applications of quantum chemical methods in the theoretical evaluation of energies of molecules and reactions.
- Development of chemical and biochemical sensors and their applications in the determination of biomolecules.

Pedagogy:

- Conventional method such as black board and chalk is used.
- Modern methods like power point presentation and animations are also used in class room teaching.
- Students will be assigned to solve the numerical problems.

Course content

UNIT-I

[16 HOURS]

Applications of quantum mechanics: Variation theorem: Statement and proof, application of variation theorem to a particle in one dimensional box, linear oscillator, H and He-atoms. Molecular orbital theory, LCAO-MO approximation, application to hydrogen molecule ion (H^{2+}), energy levels of H^{2+}, bonding and antibonding molecular orbitals, energy distribution, potential energy diagrams. Valence bond theory (VB), theory of H_2 molecule, Heitler-London method, energy levels, various modifications of Heitler-London wave function. Comparison of MO and VB theories. SCF method for many electron atom. Slater Orbitals –Effective nuclear charge (ENC), expressions for slater orbitals for 1s, 2s, 3s, 2p and 3d electrons (no derivation), Slater‘s rules for calculation of ENC. Theories of valence – Introduction, linear and non-linear variation functions, secular equations, coulombic, exchange, normalization and overlap integrals, secular determinants.

Huckel molecular orbital theory: Outline of method, assumptions. Application to ethylene, allyl radical, cyclopropenyl radical, butadiene, cyclobutadine, bicyclobutadine and benzene. Calculation of delocalization energy, charge density, π-mobile bond order and free valence.

UNIT-II

[16 HOURS]

Biosensors: Introduction, electrochemical biosensors: Amperometric, potentiometric and conductometric biosensors. Optical based biosensors: Surface plasma resonance, chemiluminesence, fibre optic biosensors, piozoelectronic sensors, mass selective and thermal sensors. Bio-recognition elements in biosensors, immobilization methods, principles of biorecognition, natural, semi-synthetic and synthetic biorecognition elements. Metabolism sensors: Glucose sensors, galactose sensors. Determination alcohol, ascorbic acid, D-isocitrate, oxalate, oxaloacetate, nitrite, nitrate, carbon monoxide, glycerol, triglycerides and sucrose. Biosensors using coupled enzyme reactions.

Applications of biosensors: Determination of glucose in blood, survey of biosensor methods for the determination of glucose. Determination of copper (I) in water using anodic stripping voltammetry.

References

1. Introductory Quantum Chemistry – A.K. Chandra. Second Edition, Tata McGraw Hill Publishing Co. Ltd., (1983).
2. Quantum Chemistry – Eyring, Walter and Kimball. John Wiley and Sons, Inc.
3. Quantum Chemistry –I.N. Levine. Pearson Education, New Delhi, (2000).
4. Theoretical Chemistry – S. Glasstone. East West Press, New Delhi, (1973).
5. Quantum Chemistry – R.K. Prasad, New Age International Publishers, (1996).
6. Valence Theory – Tedder, Murel and Kettle.
7. Surface chemistry: Theory and applications, J. J. Bikertman, Academic press, (1972).
8. Chemical Kinetics, K. J. Laidler 3rd Edn., Harper International Edn., (1087).
9. Test Bok of Physical Chemistry, S. Glasston, McMillan India Ltd., 2nd Edn. (1986).
10. Physics at Surfaces, A. Zangwill, Combridge University Press (1988).
11. Surface Crystallography, L. J. Clarke, Wiley-Interscience (1985).
12. Biosensors: Fundamentals and Applications, Bansi Dhar Malhotra and Chandra Mouli Pandey, Smither Group Co., 2017, UK.
13. Biosensors: Techniques and Instrumentations in Analytical Chemistry, Frieder Scheller and Florian Schubert, Vol. 11, Elsevier Sci. Publishers, 1992.
14. Chemical Sensors and Biosensors, Brian R. Eggins, John Wiley & Sons Ltd, UK, 2004.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	1	2	2	2	2	2	2
CO2	3	3	1	2	2	1	2	2	2
Weighted Average	3	3	1	2	2	1.5	2	2	2

Mahajana Education Society (R)

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BOARD OF STUDIES (BOS)

MASTER OF TOURISM AND TRAVEL MANAGEMENT (MTTM)

UG ☐

PG ☑

Syllabi for I, II, III and IV Semester MTTM

2023-2024

MASTER OF TOURISM AND TRAVEL MANAGEMENT (MTTM)

Motto:

- Travel towards knowledge

Vision:

- To maintain, preserve and promote cultural heritage of India.
- To promote Sustainable Responsible Tourism.
- To bring out Tourism professionals for better marketing of Indian Tourism.

Mission:

- To develop high class Infrastructure to train the students.
- To give more exposure to students by improving training facilities in Tourism Industry.
- To organise special lectures, workshop and seminars to empower the students to face future challenges.
- To visit historical and other Tourism destinations to have a realistic picture.

Programme Outcomes for MTTM

POs	Programme Outcomes (POs)
PO1	Apply knowledge of tourism and travel management and management specialization
PO2	Identify, formulate research literature and analyze business management problems
PO3	Design solutions for complex business management problems that meet specified needs with appropriate considerations for profits- people- planet
PO4	Conduct investigations of complex business management problems using research band knowledge, analysis of secondary data and interpretation of the same.
PO5	Create, select and apply appropriate techniques, resources and it tools, including modeling and solution generation.
PO6	Apply reasoning informed by the contextual knowledge to areas social, health, safety, legal and cultural issues.
PO7	Understand and evaluate the sustainability and impact of business management work in the solution in societal and sustainability context.
PO8	Apply ethical principles and commit to professional ethics and norms of business management practice.
PO9	Function effectively as an individual and as a member or leader in diverse teams and in multi-specialization teams
PO10	Able to comprehend and write effective reports and make effective presentation, including documentation and retrieval.
PO11	Demonstrate business management knowledge and understanding of business management principles.
PO12	Recognize the need for and have the preparation and ability to engage in independent and lifelong learning.

OBJECTIVES

1. To develop the skills required for the application of business concepts and techniques learnt in the classroom at the workplace.

2. To provide competent and professional skills personnel to the industry in the area of tourism and travel, marketing, organization's, basic of accounts, startup entrepreneurship, airline ticketing. To enhance the employability skills of the management students.

3. To enhance the capability of the students to improve their decision-making skills.

4. To encourage entrepreneurship among students pursuing education in the field of business administration.

5. To empower students to pursue research in tourism and travel sector.

6. To ensure holistic development of business administration students.

LIST OF BOS MEMBERS

Sl. No.	Category	Name Smt./Sri	Designation	Address for Communication	E-mail and Mobile No.
1	Chairman	Prof. Satish G. Chetty	Professor & Head	Department of Tourism &Hospitality PG Centre, PBMMEC, KRS Road, Mysore	8197358552 satishchetty@gmail.com
2	Faculty Member	Dr. Gunarekha B S	Assistant Professor	Department of Tourism &Hospitality PG Centre, PBMMEC, KRS Road, Mysore	9480438394 gunarekha75@gmail.com
3	Two Experts from external university	Dr. Binoy T A	Associate Professor &Chairman	Department of Tourism Administration Kuvempu University Shankarghatta, Shivamogga	9480012022 binoymta@gmail.com
		Dr. Joby Thomas	Dean & Associate Professor	Department of Tourism Christ University Bannerghatta campus, Bangalore	9845789109
4	Nominee by the Vice Chancellor	Dr. R Mahesh	Associate Professor	DoS in Management BIMS, Manasa Gangothri, Mysore	mahesh@bims.uni-mysore.ac.in 9886639536
5	Two Person from Industry /Corporate Sector / Allied area	Mr. Samarth G. Vaidya	MD	MVG Holidays Doctors colony Mysore	9845865485
		Dr. Nittin Mittal	Travel & Tourism	Hotel N Apartment Mittal Towers Bangalore	9845611335
6	Alumnus	Mr. Aditya M. Bhat	MD	AROHA Hotel Mysore	8088708233

Course Structure

Discipline Specific Course (DSC) and Open Elective (OE)

I Year

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		
I Semester									
HC (1)	Tourism Principles and Practices 19L101	3	1	3:1:0	15	15	70	3	100
HC (2)	Air Travel Management 19L102	3	1	3:1:0	15	15	70	3	100
HC (3)	Marketing Management for Tourism 19L103	3	1	3:1:0	15	15	70	3	100
HC (4)	Communication Skills for Tourism 19L104	4	0	4:0:0	15	15	70	3	100
SC (1)	**Choose any ONE Soft core (SC1/SC2)** Hospitality and Hotel Operations 19L105	2	0	2:0:0	5	5	40	2	50
SC (2)	Tourism Geography 19L106	2	0	2:0:0	5	5	40	2	50
SC (3)	Study tour, project report and Viva voce 19L107	0	2	0:0:2	10	10	30 Project report	-	50
					Viva voce				

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		
II Semester									
HC (5)	Organizational Behavior 19L201	2	1	2:1:0	15	15	70	3	100
HC (6)	Tour Operations Management 19L202	3	1	3:1:0	15	15	70	3	100
HC (7)	Travel Agency Management 19L203	2	1	2:1:0	15	15	70	3	100
SC (4)	Study tour, project report and Viva Voce 19L204	0	2	0:0:2	10	10	30	-	50
SC (5)	**Choose any ONE Soft core (SC5/SC6)** Airline Ticketing 19L205	3	1	3:1:0	15	15	70	3	100
SC (6)	Destination Planning and Development 19L206	3	1	3:1:0	15	15	70	3	100
OE (1)	Travel and Tourism Management 19L207	3	1	3:1:0	15	15	70	3	100

Course Type, Code and Name		Hours/ Week		Credits	Maximum Marks			Exam Duration	Total Marks
					IA		Exam		
		L	T/P	L:T:P	C1	C2	C3		
III Semester									

(8)	Industry 19L301								
HC (9)	International Tourism Destinations 19L302	2	1	2:1:0	15	15	70	3	100
HC (10)	Tourism Research Methods 19L303	2	0	2:0:0	5	5	40	2	50
SC (7)	Study tour, project report and Viva Voce 19L304	0	2	0:0:2	10	10	30	-	50
SC (8)	**Choose any TWO Soft core (SC8/SC9/SC10)** Tourism Planning and Development 19L305	2	1	2:1:0	15	15	70	3	100
SC (9)	Event Management 19L306	2	1	2:1:0	15	15	70	3	100
SC (10)	Digital Applications in Tourism 19L307	2	1	2:0:1	15	15	70	3	100
OE (2)	Heritage of India 19L308	3	1	3:1:0	15	15	70	3	100

Course Type, Code and Name		**Hours/ Week**		**Credits**	**Maximum Marks**			**Exam Duration**	**Total Marks**
					IA		**Exam**		
		L	**T/P**	**L:T:P**	**C1**	**C2**	**C3**		
IV Semester									
HC (11)	On the job training for a minimum period of 2 months in any tourism / hospitality industry 19L401	0	3	0:0:3	-	-	100	-	100
HC (12)	Training report and Viva voce. 19L402	0	3	0:0:3	-	-	100	-	100
HC (13)	Start up& Entrepreneurship Development 19L403	2	0	2:0:0	5	5	40	2	50
SC (11)	Project report and Viva voce 19L404	3	1	3:1:0	15	15	70	3	100
SC (12)	Personality Development & Soft skills 19L405	2	0	2:0:0	5	5	40	2	50
SC (13)	**Choose any ONE Soft core (SC13/SC14)** Wellness Tourism 19L406	2	1	2:1:0	15	15	70	3	100
SC (14)	Air Cargo Management 19L407	2	1	2:1:0	15	15	70	3	100

HC (1) Syllabus for MTTM
Semester – I

Course Code: 19L101	Course Title HC (1): Tourism Principles and Practices
Course Credit (L:T:P): 4(3:1:0)	Teaching Hours/Week:4
Total Contact Hours: 56Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70

Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,

Course Outcomes:

CO1: Acquire knowledge on the concepts of tourism, tourists, Forms and characteristics of Tourism, tourism resources, components, tourism system and its elements

CO2: Acquire knowledge on the concept, functions and characteristics of management and its relevance in the tourism industry

CO3: Analyse the nature and purpose of planning and organizing, their advantages and disadvantages.

CO4: Explore the concept, problems and process of directing and controlling with respect to human aspect

CO5: Acquire knowledge on different types of tourism and alternative tourism

.

Syllabus	Hours
ModuleNo.1:	**12**
Introduction to Tourism- Tourism: definition, meaning, nature and scope; Tourist, travellers, visitor, transit visitor and excursionist - definition and differentiation; Leisure, recreation and tourism and their Interrelationship; Brief history of tourism worldwide and in India- Forms of Tourism: Concept of tourism resource, attraction, product, market, industry and destination in the context of tourism; components (5A's Attraction, Accessibility, Accommodation, Amenities and Activities), Tourism system and Elements of tourist (Lieper's Model)–Characteristics of Tourism (Intangibility, Perishability, Variability, Inseparability, Heterogeneous, Multitude of industry, Pricing competitiveness / Flexibility) inbound and outbound tourism, domestic, international tourism.	
ModuleNo.2:	**12**
Fundamentals of Management for Tourism: Meaning, concept and characteristics of management - Nature of management: Management as a science, arts, Functions of management and their relevance in tourism industry - Types of management.	
Module No.3:	**12**
Planning-The nature and purpose of planning- principles of planning- types of planning- advantages and limitations of planning. **Organizing**– Nature and purpose of organizing- basis of departmentalization, span of management- line and staff relationship line and staff conflicts-bases of delegation-methods of decentralization.	
ModuleNo.4:	**10**
Directing – Directing and problems in human relationship-motivation communication and leadership-coordinating. Management by objectives (MBO). **Controlling** – Concept and process of control, control of overall performance, human aspect of control.	

ModuleNo.5:	10

Types of Tourism: Heritage Tourism, Adventure Tourism, and Cultural tourism, Sports Tourism, MICE Tourism, Educational Tourism and Mass Tourism. **Alternative Tourism:** Eco Tourism, Rural Tourism, Agro/Farm Tourism, Yoga Tourism.

Text books:

1. An introduction to Travel and Tourism, McGraw Hill Int. Edition. 1994.
2. Mill and Morrison, (1992), The Tourism System: An Introductory Text, Prentice Hall.

Recommended for Reference:

- Cooper, Fletcher et al, (1993), Tourism Principles and Practices, Pitman.
- Burkart and Medlik, (1981), Tourism: Past, Present and Future, Heinemann, ELBS.
- Essential of Management – Harold Koontz and Heinz Weihrie
- Organization and Management – R.D.Agarwal
- C.B. Memoria, Personnel Management. K. Aswathappa, Human Resource Management, Tata Mc-Graw Hill New York.
- C.S. VenkataRatnam, Personnel Management, Tata Mc-Graw Hill New York
- Cooper, Chris and Bonifare, Worldwide Destinations, the Geography of Travel and Tourism, Butterworth.
- Inskeep E, Tourism Planning – An Integrated and Sustainable Development. Approach.
- Jagmohan Negi, Tourism and Travel: Concepts and Principles.
- P.S. Gill, Dynamics of Tourism (4Vols) Anmol Publication.

Web link:

1. https://recil.ensinolusofona.pt/bitstream/10437/5239/1/definition_scope_tourism.pdf
2. https://www.nios.ac.in/media/documents/tourism_337_courseE/337_Tourism_Eng/337_Tourism_Eng_L15.pdf
3. https://www.iedunote.com/planning-nature-importance-types
4. https://theintactone.com/2019/08/10/mcie-u5-topic-1-directing-controlling/

Video Content:

1. https://www.youtube.com/watch?v=aU8yHXL2Xy8
2. https://www.youtube.com/watch?v=WCK9zQyW9pc

Course Articulation Matrix - 19L101

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	-	2	2	2	-	1	3	1
CO2	2	2	3	2	1	-	3	2	1	1	2	1
CO3	2	1	2	-	2	-	2	1	3	2	1	1
CO4	2	1	-	-	2	-	3	1	-	2	-	2
CO5	2	2	1	-	-	1	-	2	-	3	1	2
WA	**2**	**1.4**	**1.75**	**1.5**	**1.66**	**1.5**	**2.5**	**1.6**	**2**	**1.8**	**1.75**	**1.4**

HC (2) Syllabus for MTTM
Semester – I

Course Code: 19L102	Course Title HC (1): Air travel management
Course Credit (L:T:P): 4 (3:1:0)	Teaching Hours/Week:4
Total Contact Hours: 56Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70

Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,

Course Outcomes:

CO1: Acquire knowledge on History, types. terminologies of aviation and airline industries
CO2: Explore the Classes and services of an Aero plane and its fundamentals
CO3:Acquire knowledge on airline policies with respect to various categories
CO4: Acquire knowledge on methods of handling baggage and tracing them
CO5: Acquire knowledge on effect of health and health considerations on travel rules

Syllabus:	**Hours**
ModuleNo.1:	**12**
History of aviation, types of aviation, Domestic and international Airlines, Scheduled, Non scheduled airlines, Chicago and Warsaw convention, five freedoms of Air, Aviation terminology & Airline terms and abbreviations, types of journey. IATA geography, Global alliances in airline industry, countries – capital, currencies, city codes, Airport codes.	
ModuleNo.2:	**12**
Types of civilian aircraft, seating, arrangement, Classes of service, theory of an Aero plane, profile of Air crew, Aircraft exterior – External features of an Aircraft & its function. Interior of an air craft – cabin layout, seating arrangements, doors, windows, galley, Air craft communication system, emergency exit. Theory of an Airplane.	
Module No.3:	**11**
Policies of Airlines – unaccompanied minor, Dangerous goods- classification, packing and marking, carrying of pet animals, trends in airline industry in new millennium.	
ModuleNo.4:	**10**
Baggage Handling – Checked baggage, Free baggage allowance – weight & piece concept, excess baggage charges, Baggage tracing – type of mishandled baggage, systems for tracing mishandled baggage, found & unclaimed baggage. Property irregularity report.	
ModuleNo.5:	**11**
Health considerations in Air travel – cabin air pressure, Immobility and Circulatory problems, Jet lag, Travellers with medical conditions, Infants, pregnant women, pre-existing illness, Travellers with disabilities, communicable diseases, medical assistance.	

Text books :

1. The Airline Business in the 21th Century- Dogains R.
2. Air Travel: A Social history – Hudson, Kenneth

Recommended for Reference:

1. Airline ticketing- Jagmohan Negi
2. Flight reservation and airline ticketing-Jitendra K.Sharma

Web link:

1. https://www.sciencedirect.com/topics/engineering/aircraft-seats
2. https://www.icao.int/publications/Documents/9082_9ed_en.pdf

Video Content:

1. https://www.youtube.com/watch?v=-TLHTQyFvNw
2. https://www.youtube.com/watch?v=mhl82ChYf2o

Course Articulation Matrix - 19L102

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	1	2	1	-	-	3	-	2	-	1
CO2	2	1	2	-	1	-	2	2	2	-	3	1
CO3	2	1	2	3	2	2	1	-	-	2	2	1
CO4	2	2	2	1	1	-	1	-	2	-	3	-
CO5	2	2	2	-	2	-	3	1	2	1	1	2
WA	**2**	**1.5**	**1.8**	**2.3**	**1.4**	**1**	**1.75**	**2**	**2**	**1.66**	**2.25**	**1.25**

HC (3) Syllabus for MTTM
Semester - I

Course Code: 19L103	Course Title HC (3): Marketing Management for Tourism

Course Credit (L:T:P): 4(3:1:0)	Teaching Hours/Week:4
Total Contact Hours: 56Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70

Pedagogy: Classroomlecture,tutorials,groupdiscussion,seminar,casestudiesandfield Visit etc.,

Course Outcomes:

CO1:Acquire knowledge on Marketing Management, Public Relations and Sales promotion
CO2:Analyzing the importance of promotion in the marketing mix for tourism management
CO3: Exploring the Role of advertising in Economic development
CO4:Acquire knowledge on Advertising campaign planning and communication strategy
CO5:Acquire knowledge on Advertising media and legal aspects of advertising business

Syllabus:	**Hours**
ModuleNo.1:	**12**
Introduction to Marketing Management – meaning – nature – differences between selling and marketing – Marketing Mix - Promotion Mix: Meaning – elements of promotion mix, Public Relations and Sales promotion - Determinants of Promotion Mix	
ModuleNo.2:	**11**
Role of promotion in the marketing mix for tourism management – difference between advertising and sales promotions – determinants of promotion mix – advertisement for Hotel & Tourism.	
Module No.3:	**12**
Advertising - Need, scope and importance of advertising – Role of advertising in the Economic development, advertising and society, latest trends in advertisements – Different types of advertisements.	
ModuleNo.4:	**10**
Advertising campaign planning, advertising copy design and communication strategy, copy-visualization layout, advertising appeals and themes, classification of advertising copies, essentials of good copy.	
ModuleNo.5:	**11**
Advertising media, types of media, media planning and scheduling – advertisement budget – approaches to advertising budgeting. Advertising agencies – legal and ethical aspects of advertising business in India. Advertisement aids – trade market – slogans – packages – point of purchase displays - below the line promotion	

Text books:

1. Marketing for Hospitality and Tourism - Philip Kotler, Jon Bower, James Maken
2. Marketing Management - V.S. Ramaswamy , S. Namakuman

Recommended for Reference:

1. Advertising and Promotion – Belch and Belch
2. Advertising Management – Rathour
3. Advertising Management – Chunawalla
4. Advertising Management – Write & Ziegler
5. Advertising Management – Mahendra Mohan
6. Tourism Marketing: Les Lumsdon
7. Marketing for Tourism - J. Christopher Holloway & Chris Robinson
8. Tourism Marketing & Management Handbook - Stephen F. Wilt and Luiz Mountinho
9. Marketing in Travel and Tourism - Victor T.C. Middleton

10. Marketing Management Analysis, Planning and Control, Kotler, Philip. PHI.
11. Principles of Marketing, Kotler Philip and Armstrong, G. PHI.
12. Fundamentals of Marketing, Stanton, William J, McGraw Hill.

Web link:

1. https://www.feedough.com/what-is-advertising-advertising-objectives-examples-importance/
2. https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/instructionalmaterial/wcms_218329.pdf

Video Content:

1. https://www.youtube.com/watch?v=xSABYsUJ5Y4
2. https://www.youtube.com/watch?v=xc4tUE9y300

Course Articulation Matrix - 19L103

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	1	-	-	1	2	3	1	1	2
CO2	2	1	1	-	1	2	1	2	1	2	-	2
CO3	2	1	3	1	1	2	2	-	-	-	2	2
CO4	2	1	3	1	1	2	1	2	2	1	2	1
CO5	2	3	1	1	-	-	2	-	1	-	3	1
WA	**2**	**1.6**	**2.2**	**1**	**1**	**2**	**1.4**	**2**	**1.75**	**1.33**	**2**	**1.6**

HC (3) Syllabus for MTTM
Semester - I

Course Code: 19L104 — Course Title HC (4): Communication Skills for Tourism

Course Credit (L:T:P): 4(4:0:0) — Teaching Hours/Week:4

Total Contact Hours: 56Hrs — Formative Assessment Marks: 30

Duration of Exam: 3 Hours — Semester End Examination Marks: 70

Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,

Course Outcomes:

CO1: Acquire knowledge on communication, process, methods and barriers

CO2: Analyzing the importance of media, mode and computers in communication

CO3: Exploring the concepts of business letter, agenda, reports, summaries and representation

CO4: Acquire knowledge on communication verbal, non-verbal, etiquettes and skills

CO5: Acquire knowledge on presentation and audio video aids

Syllabus: **Hours**

ModuleNo.1: **12**

Meaning and characteristics of Communication – Role of Communication in Business - Process of Communication – Objectives – Methods of Communication – Verbal – Oral – Written – Non-Verbal - Barriers to Communication – Physical Barriers – Language (Semantic Barriers) – Socio Psychological Barriers – Cross Cultural Barriers – How to overcome Barriers.

ModuleNo.2: **11**

Media and Modes – Conventional Modes – Mail – courier – Telegraph – Telex – Electronic Communication – Telephone – Cellular phones – Fax – Email – Tele Conferencing - Internet – Use of Computers for Communication – Media of Mass Communication – Notice Board – Hoarding – Newspaper – Magazines – Film – Television – Internet (social media).

Module No.3: **12**

Layout of a Business Letter – Job applications – resume - Enquiries and replies – Order and replies – Complaints and Claims – Sales Letters – Credit letters and Status Enquiries - Meeting Notice – Agenda – memos – e-mails– Reports – Structure of a report – executive Summaries – Representation.

ModuleNo.4: **10**

Communication through speaking, discussing, listening and negotiating - Use of body language – business etiquettes – making speeches - Dialogue skills – Feedback skills – Telephone Dialogue – Telephone Etiquette

ModuleNo.5: **11**

Presentations – Making a Presentation – Preparing the text using Audio -Visual Aids – Power point Presentations

Text books:

1. Marketing for Hospitality and Tourism - Philip Kotler, Jon Bower, James Maken
2. Marketing Management - V.S. Ramaswamy , S. Namakuman

Recommended for Reference:

1. Advertising and Promotion – Belch and Belch
2. Advertising Management – Rathour
3. Advertising Management – Chunawalla
4. Advertising Management – Write & Ziegler
5. Advertising Management – Mahendra Mohan
6. Tourism Marketing: Les Lumsdon
7. Marketing for Tourism - J. Christopher Holloway & Chris Robinson
8. Tourism Marketing & Management Handbook - Stephen F. Wilt and Luiz Mountinho
9. Marketing in Travel and Tourism - Victor T.C. Middleton
10. Marketing Management Analysis, Planning and Control, Kotler, Philip. PHI.
11. Principles of Marketing, Kotler Philip and Armstrong, G. PHI.
12. Fundamentals of Marketing, Stanton, William J, McGraw Hill.

Web link:

1. https://www.feedough.com/what-is-advertising-advertising-objectives-examples-importance/
2. https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/instructionalmaterial/wcms_218329.pdf

Video Content:

1. https://www.youtube.com/watch?v=xSABYsUJ5Y4
2. https://www.youtube.com/watch?v=xc4tUE9y300

Course Articulation Matrix - 19L104

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	1	-	-	1	2	3	1	1	2
CO2	2	1	1	-	1	2	1	2	1	2	-	2
CO3	2	1	3	1	1	2	2	-	-	-	2	2
CO4	2	1	3	1	1	2	1	2	2	1	2	1
CO5	2	3	1	1	-	-	2	-	1	-	3	1
WA	**2**	**1.6**	**2.2**	**1**	**1**	**2**	**1.4**	**2**	**1.75**	**1.33**	**2**	**1.6**

SC (1) Syllabus for MTTM
Semester - I

Course Code: 19L105	Course Title SC (1): Hotel and hospitality operations
Course Credit (L:T:P): 2 (2:0:0)	Teaching Hours/Week:2
Total Contact Hours: 28Hrs	Formative Assessment Marks: 10
Duration of Exam: 2 Hours	Semester End Examination Marks: 40
Pedagogy: Classroomlecture,tutorials,groupdiscussion,seminar,casestudiesandfield Visit etc.,	
Course Outcomes: CO1: Exploring the Inter-relationship between hotel and tourism industry and concepts of hotel industry CO2: Analyzing Organization Structure and different departments of hotels CO3:Acquire knowledge on coordination and organisation of front office and bell desk CO4:Acquire knowledge on the organization and importance of Housekeeping	

CO5:Acquire knowledge on Functions, operations and trends in Hospitality Industry

Syllabus:	**Hours**
ModuleNo.1:	**6**
Introduction to hospitality industry: Definition, characteristics, Inter-relationship between hotel and tourism industry. Introduction to Hotels, definition, Growth and development of hotel industry, pioneer companies in hotel and accommodation sector in India, types of tourist accommodation, types of rooms, meal plans	
ModuleNo.2:	**7**
Classification of Hotel-Star categorization- Location – Size- Ownership, Organization Structure-operational department – Front office, Housekeeping, Food & Beverage Service and Food Production and non-operational department –Human Resource, Sales & Marketing, Finance, IT, Purchase & Receiving, Engineering & Maintenance, Store, Security department.	
Module No.3:	**7**
ORGANISATION OF FRONT OFFICE AND BELL DESK – Layout, staff, duties and responsibilities of front office staff, symbols used in Front Office, Co-ordination of Front Office with other departments, Functions of receptionist. Guest Cycle. LOBBY & BELL DESK OPERATION – Role of Lobby Manager, Functions of Bell Desk, staff organization and luggage handling procedure on guest arrival and departure, Left Luggage Procedure.	
ModuleNo.4:	**4**
Organisation of Housekeeping – importance of housekeeping, Layout, Staff Organization, brief outline of duties of executive Housekeeper, role of control desk.	
ModuleNo.5:	**4**
Future trends in Hospitality Industry – Usage of CRS in Hotel Industry, operational usage through chain of hotels. FHRAI, Role of FHRAI in hotel industry- Functions and operations.	

Text books :

1. Prof.Jagmohan Negi, Gaurav Manoher, Hospitality Management, Published by Laxmi Publications, Ltd.
2. S. Kannan (2003) Hotel Industry in India, Deep and Deep Publications, Pvt. Ltd., New Delhi

Recommended for Reference:

Gray and Ligouri: 'Hotel and motel management and operations' PHI,NewDelhi,2000.
Negi, 'Hotels for Tourism Development', S.Chand, New Delhi.
Negi: Professional Hotel Management (Delhi: S.Chand).
Jones & Lockwood – The Management of Hotel Operations.

Weblink:

1. https://setupmyhotel.com/train-my-hotel-staff/front-office-training/780-main-functions-of-bell-desk.html
2. http://paramjamwal.blogspot.com/2013/11/organizational-structure-of-hk.html

Video Content:

1. https://www.youtube.com/watch?v=aYB1xJ1s1Cg
2. https://www.youtube.com/watch?v=4EXZv4OGfhI

Course Articulation Matrix - 19L105

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	3	1	2	-	2	3	1	1
CO2	2	2	3	1	1	1	2	2	2	3	-	1
CO3	2	2	-	1	-	2	2	2	-	1	1	1
CO4	2	1	2	1	2	1	-	-	3	1	1	2
CO5	2	2	1	2	3	3	2	1	1	2	1	2
WA	**2**	**1.8**	**1.75**	**1.4**	**2.25**	**1.6**	**2**	**1.66**	**2**	**2**	**1**	**1.4**

SC (2) Syllabus for MTTM
Semester - I

Course Code: 19L106	Course Title SC (2): Tourism geography
Course Credit (L:T:P): 2 (2:0:0)	Teaching Hours/Week:2
Total Contact Hours: 28Hrs	Formative Assessment Marks: 10
Duration of Exam: 2 Hours	Semester End Examination Marks: 40
Pedagogy: Classroomlecture,tutorials,groupdiscussion,seminar,casestudiesandfield Visit etc.,	
Course Outcomes: CO1:Acquire knowledge on geographical components nature of Tourism system CO2:Analyzing geography of Actual demand and Suppressed Demand for Tourism CO3:Acquire knowledge on Importance of geography in World Tourism across difference time zones along with case studies CO4: Acquire knowledge on tourism across various climate zones CO5:Acquire knowledge on characteristics and management of tourism Resources and Tourism Planning	
Syllabus:	**Hours**
ModuleNo.1:	**4**
Introduction- Concepts- leisure, Recreation and tourism-Geography and Tourism-Spatial scale- the geographical components of the Tourism system-nature of Tourism system-Market-Distance travelled.	
ModuleNo.2:	**5**
The geography of Demand for Tourism-Concepts and Definition-Actual demand-Suppressed Demand-Effective demand-Political influences-lifestyle Determinants-personality factors-Cohen's classification of Tourist-Deferred Demand.	
Module No.3:	**5**
Importance of geography in the World Tourism- Latitudes and longitudes, Local time, Standard time,	

Greenwich mean time, Location of a Destination, International date line - Time zones-Flying Time calculations.

ModuleNo.4:	**7**

Climate and Tourism-climate elements and tourism-Climate Zones-Climate Change-Indian climate patterns-North-South-East and West-Indian Tourism Regions and zoning-Western arid region-Semi-arid region-canal Region-Aravali region-Eastern agro-industrial region-Southeastern Agricultural region and Chambal ravine region-Case studies on Bali(Indonesia), Maldives and Costa Rica.

ModuleNo.5:	**7**

The geography of Resources for Tourism-Characteristics and management of tourism Resources-Tourism Planning –Visitor management strategies and Action-Tourism resource at the Global Scale-tourism resources at the National scale-classification of recreation resources-tourism resources at the local scale-resorts and other tourist Centres-Typology of Tourist Centres-Case study on Italy, Singapore ,Japan and USA.

Text books:

1. Dr. Rana Pratap and Dr.Kamla Prasad-Tourism Geography, Shree publishers and Distributors, New Delhi.
2. Velvet Nelson-An Introduction to the Geography of Tourism, Rawat publications, New Delhi.

Recommended for Reference:

1. Geetanjali –Tourism Geography, Centrum Press, New Delhi.
2. Subhash Chandra Sharma-geography of Tourism, rajat publications, New Delhi.
3. Brian Boniface and Chris Cooper-The Geography of Travel and Tourism, BH Publications.
4. Mohinder Chand-Travel Agency management, Anmol publications PVT Ltd,. New Delhi

Weblink:

1. https://www.studocu.com/in/document/panjab-university/geography-for-tourism/importance-of-geography-in-tourism/17295454
2. https://www.goodfellowpublishers.com/free_files/Chapter%203-3eafc3ad2892037d0881f6276a8499c0.pdf

Video Content:

1. https://www.youtube.com/watch?v=rcCPV5Z6y5I
2. https://www.youtube.com/watch?v=FNn86zT2tRY

Course Articulation Matrix - 19L106

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	3	2	3	2	3	1	1	1	1
CO2	2	-	2	-	1	3	1	1	1	2	-	1
CO3	2	2	-	1	-	2	3	1	1	2	1	1
CO4	2	2	-	1	3	-	2	1	1	2	1	2
CO5	2	2	1	3	2	1	1	2	2	2	1	2
WA	**2**	**2**	**1.33**	**2**	**2**	**2.25**	**1.8**	**1.6**	**1.4**	**1.8**	**1**	**1.4**

SC (3) Syllabus for MTTM
Semester - I

Course Code: 19L107	Course Title SC (3): Study tour, Project report and viva voce
Course Credit (L:T:P): 2(0:0:2)	Teaching Hours/Week:- -
Total Contact Hours:-	Formative Assessment Marks: 20 (Viva Voce)
Duration of Exam: -	Semester End Examination Marks: 30 (Study tour report)
Pedagogy: Study tour visit etc.,	
Course Outcomes: CO1: Acquire knowledge on the concepts of tourism and commitment to ethical practices of tourism. CO2: Acquire knowledge on diverse nature of tourism, including culture and place, global/local perspectives	

Course Articulation Matrix -19L107

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	-	-	2	1	3	1	-	2
CO2	2	1	2	3	1	-	-	1	1	2	1	-
WA	**2**	**1.5**	**1.5**	**2.5**	**1**	**-**	**2**	**1**	**2**	**1.5**	**1**	**2**

HC (5) Syllabus for MTTM
Semester - II

Course Code: 19L201	Course Title HC (5): Organizational Behavior
Course Credit (L:T:P): 3(2:1:0)	Teaching Hours/Week: 3
Total Contact Hours:42Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70

Pedagogy: Classroomlecture,tutorials,groupdiscussion,seminar,casestudiesandfield Visit etc.,

Course Outcomes:

CO1: Acquire knowledge on the concepts of organizational behaviour, psychology, personal growth, personal life style and training individual conflict.

CO2: Acquire knowledge on the aspects of individuals and organization related to attitudes, aptitudes, personality and perception – beliefs – values.

CO3: Analyse the nature, purpose and process of employee counseling, negotiation skills.

CO4: Explore the concepts of motivation, job design, Stress, employee discipline.

CO5: Acquire knowledge on organizational culture, types and good culture.

Syllabus:	**Hours**
ModuleNo.1:	**8**
Foundation of Organizational Behaviors – Psychology as a Science of Human Behavior – Contribution of behavior Science to Management – Personal Growth – Meaning and Concepts of personal Growth, Personal Life style choices, personal growth and Training Individual conflict.	
ModuleNo.2:	**8**
Individuals and organization, individual differences – Attitudes – Aptitudes and interest – personality theories – personality tests – personality determination – perception – beliefs – values-problems and perception.	
Module No.3:	**8**
Employee Counseling: Meaning – need – Manager's role in changing behavior. Negotiation Skills: Creating Climate – Opening Process – Conducting the negotiation – Preparing for Negotiation- Styles of Negotiating – Rules of Negotiating.	
ModuleNo.4:	**10**
Motivation- Concepts and Application, Definition, Early and Contemporary theories, From Concept of Applications – Job design, goal setting and other programmes. Stress: Meaning, Nature and levels of stress, causes, effects and coping strategies. Employee discipline – standing orders – discipline and disciplinary procedures – charge sheet – enquire – punishment – dismissal– appeal	
ModuleNo.5:	**8**
Organizational culture – creativity and innovation - types of culture – Authoritarian and participative culture- Dominant and sub- culture – strong and weak culture – healthy and unhealthy culture – how to acquire good culture.	

Reference books:

1. Gregory Moorehead and Ricky W Griffin, Organizational Behavior – Managing People and Organizations, Biztantra, 7/e, 2005

2. Negotiation Hand Book – PHI

3. Essentials of Negotiation, HBS, 2003

4. Bill Scott, The Skills of Negotiating, Jaico, 2003

5. Organizational behavior – Hartman and Harris – Jaico

6. Organizational behavior- Rhanka.

7. Organizational behavior – B.S. P. Rao

Web links:
https://study.com/academy/lesson/what-is-negotiation-the-five-steps-of-the-negotiation-process.html

Video Contents:
https://eforms.com/employee/write-up/counseling/
https://alis.alberta.ca/inspire-and-motivate/counselling-diverse-clients/

Course Articulation Matrix -19L201

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	1	2	1	1	2	1	2	2
CO2	2	2	2	1	1	2	1	-	1	1	1	1
CO3	2	-	1	-	1	1	1	1	1	-	1	1
CO4	2	2	1	2	1	1	1	2	1	1	1	1
CO5	2	1	1	1	2	1	1	1	1	1	1	1
WA	**2**	**1.75**	**1.2**	**1.5**	**1.2**	**1.4**	**1**	**1.25**	**1.2**	**1**	**1.2**	**1.2**

HC (6) Syllabus for MTTM
Semester – II

Course Code: 19L202	Course Title HC (6): Tour Operations Management
Course Credit (L:T:P): 4(3:1:0)	Teaching Hours/Week:4
Total Contact Hours: 56Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70

Pedagogy: Classroomlecture,tutorials,groupdiscussion,seminar,casestudiesandfield Visit etc.,

Course Outcomes:

CO1: Acquire knowledge on the concepts, functions and types of tour operators, tour operations and various segments of travel industry.

CO2: Acquire knowledge on rules, roles, income of tour operators, CRS, GDS.

CO3: Analyse the types, forms and components of package tours, inbound and outbound packages,

CO4: Explore the concept related to itinerary and brochure designing.

CO5: Acquire knowledge on tour costing and pricing, trends and challenges.

Syllabus:	**Hours**
ModuleNo.1:	**12**
Tour operators and Tour operations, Definition – Functions and types– Departmentalization, The Travel Market: Business Travel, Corporate travel, Commercial group travel, Institutional travel – Leisure Travel: Family Travel, Single resort travel, special interest travel – Segments of travel industry: Travel agencies – Airlines – Lodging establishments – Tour wholesalers – Cruise liners – Car rentals – Rail transportation.	
ModuleNo.2:	**12**
Rules for Recognition – Role of Tour operator – Income of Tour operator –Tour Wholesalers – Designing a Tour – Tour order – Input and Output of Tour operation – Reservation systems – Centralized Reservation systems (CRS) and Global Distribution System (GDS).	
Module No.3:	**12**
Package Tours, types and forms of tour package, Components of Package Tour – Basic Principles in packaging – factors affecting tour packaging and package selection –Mass Market Package holidays, inbound and outbound package tours – Free Independent Traveller (FIT'S) Packages or Inclusive Tours, Merits and demerits of package tour, special requirements for outbound packages, Sources of earning: commissions, service charges.	
ModuleNo.4:	**10**
Stages of Package Tour formulation: Initial Research- pre experience and post experience; Development of itinerary; Appointment of destination Coordinators; Negotiation with vendors, designing tour brochure, Developing reservation system, Common package types, different trip types, Itinerary preparation, and important considerations for preparing itinerary, Different types of tour itinerary, Travel Terminology.	
ModuleNo.5:	**10**
Tour costing and pricing- components of tour cost, consumer trends affecting the future of tour operating, consumer issues in tour operating.	

Reference books:

1. Chand.M., 'Management of Travel Agency and Tour Operation', Anmol, New Delhi.
2. JagmohanNegi, 'Tourist Guide and Tour Operation: Planning & Organising'

Kanishka, New Delhi,2005.

3. Kamra, K.K. and Chand, Mohinder (2002). Basics of TourismTheory, operation and Practice, New Delhi: KanishkaPublishers, and distributors.

4. Swain, S. K., & Mishra, J. M. (2012). Tourism: Principles andPractices. Oxford University Press.

5. Goeldner, C. R., & Ritchie, J. B. (2007). Tourism principles,practices, philosophies. John Wiley & Sons.

6. Holloway, J.C. (2008). The Business of Tourism, London: PersonEducation Limited.

7. Yale P. (1995). The Business of Tour Operations, London: Pitman.

Web links:
https://www.easemytrip.com/holiday-packages.html

Video Contents:
https://www.sotc.in/international-tour-packages
https://traveltriangle.com/tour-packages/singapore

Course Articulation Matrix -19L202

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	1	2	1	2	2	1	1	2
CO2	2	1	1	1	1	-	1	1	-	-	1	1
CO3	2	2	3	2	1	1	2	1	1	1	1	2
CO4	2	2	1	1	1	1	1	1	1	1	1	2
CO5	2	1	2	1	1	1	1	2	1	1	1	2
WA	**2**	**1.6**	**1.8**	**1.4**	**1**	**1.25**	**1.2**	**1.4**	**1.25**	**1**	**1**	**1.8**

HC (7) Syllabus for MTTM
Semester - II

Course Code: 19L203	Course Title HC (7): Travel Agency Management
Course Credit (L:T:P): 3(2:1:0)	Teaching Hours/Week:3
Total Contact Hours:42Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70

Pedagogy: Classroomlecture,tutorials,groupdiscussion,seminar,casestudiesandfield Visit etc.,

Course Outcomes:

CO1: Acquire knowledge on the concepts of travel and tourism industry, travel agency and role of TAAI and UFTA.

CO2:Acquire knowledge on the concepts of travel agency and tour operations and its growth and development

CO3: Analyse the structure of travel agency, sources of income, travel formalities and principal suppliers and challenges.

CO4: Explore the concept and prospects of online travel agency with case studies, travel agent access to GDS and CRS.

CO5: Acquire knowledge to set up travel agency, types of organisation and rules for getting approval, IATA rules and regulation for accreditation.

Syllabus:	**Hours**
ModuleNo.1:	**8**
Introduction to Tourism Industry, History & Growth of Travel Agency Business, Emergence of Thomas Cook and American Express, Scope, Travel trade- Concept of travel & tourism – Nature and features of tourism as an industry. Role of TAAI and UFTA in travel agency business.	
ModuleNo.2:	**8**
Travel agency– Definition of Travel Agency and Tour Operations, Differentiation, Interrelationship, Role and contributions of travel agency in the growth and development of tourism.	
Module No.3:	**8**
Travel Agent: Organization Structure of Travel Agency, Travel formalities – Passport &Visa – Types, Types and Functions of a Travel Agent, Ancillary tourism service. Sources of income for the travel agency: Commission, Service charges. Dealing with Principal Suppliers: Dealing with air travel, tourist transport and accommodation. Supplier challenges, travel search engines.	
ModuleNo.4:	**10**
Introduction to Online Travel Agency business, Business Model, Case study on Expedia/Make my trip/ trip advisor. Travel Agent access to GDS and CRS, booking cruises, USA rail pass, Eurail pass, Brit rail pass, India rail pass. International car hires.	
ModuleNo.5:	**8**
How to set up travel agency: Market research, sources of funding, comparative study of various types of organisation proprietorship, partnership, and private limited and limited, Govt. rules for getting approval, IATA rules, regulation for accreditation, documentation, office automation, practical exercise insetting up a travel agency.	

Reference books:

1. J.M.S.Negi, 'Travel Agency Operation, Concepts and Principles' Kanishka, New Delhi,2005
2. Victor.T.C. 'Marketing & Selling of Airline products', 2004, England.

3. Holloway, J.C., 'The Business of Tourism', PH, London, 2002
4. Chand.M., 'Management of Travel Agency and Tour Operation', Anmol, New Delhi
5. JagmohanNegi, 'Tourist Guide and Tour Operation: Planning & Organising' Kanishka, NewDelhi,2005.
6. P. C. Sinha, Encyclopedia of tourism management.
7. Gee, Chuck and Y. Makens (1990). Professional Travel Agency Management, New York: Prentice Hall.
8. Mohinder Chand (2007) Travel Agency Management: An Introductory Text. New Delhi:Anmol Publications Pvt. Ltd.

Web links:
https://www.altexsoft.com/blog/online-travel-agency-business/

Video Contents:
https://www.travelopro.com/how-to-start-online-travel-agency.php
https://www.travelperk.com/blog/best-online-travel-agencies/

Course Articulation Matrix -19L203

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	1	1	1	-	1	-	1
CO2	2	2	1	2	2	1	2	1	1	1	1	2
CO3	2	1	2	1	1	1	1	1	1	1	1	2
CO4	2	1	2	1	-	2	1	1	1	1	1	2
CO5	2	2	1	2	1	1	1	1	1	1	1	2
WA	**2**	**1.4**	**1.4**	**1.4**	**1.25**	**1.2**	**1.2**	**1**	**1**	**1**	**1**	**1.8**

SC (4) Syllabus for MTTM
Semester - II

Course Code: 19L204	Course Title SC (4): Study tour, Project report and viva voce
Course Credit (L:T:P): 2(0:0:2)	Teaching Hours/Week:- -
Total Contact Hours:-	Formative Assessment Marks: 20 (Viva Voce)
Duration of Exam: -	Semester End Examination Marks: 30 (Study tour report)
Pedagogy: Study tour visit etc.,	
Course Outcomes: CO1: Acquire knowledge on the concepts of tourism and commitment to ethical practices of tourism. CO2: Acquire knowledge on diverse nature of tourism, including culture and place, global/local perspectives	

Course Articulation Matrix - 19L204

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO1	2	2	1	2	-	-	2	1	3	1	-	2	2
CO2	2	1	2	3	1	-	-	1	1	2	1	-	2
WA	**2**	**1.5**	**1.5**	**2.5**	**1**	**-**	**2**	**1**	**2**	**1.5**	**1**	**2**	**2**

SC (5) Syllabus for MTTM
Semester - II

Course Code: 19L205	Course Title SC (5): Airline Ticketing
Course Credit (L:T:P): 4(3:1:0)	Teaching Hours/Week:4
Total Contact Hours:56Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70

Pedagogy: Classroomlecture,tutorials,groupdiscussion,seminar,casestudiesandfield Visit etc.,

Course Outcomes:

CO1: Acquire knowledge on IATA area, city codes-airport codes, CRS/GDS.
CO2: Acquire knowledge on the travel classes and class codes, computerized, manual ticketing and charges.
CO3: Analyse the fare construction terminology, types of journeys, transfer point.
CO4: Explore the concept of international fares and ticketing, e-ticketing, currency system.
CO5: Acquire knowledge on application of Amadeus in PNR, encoding and decoding, seat, meal, refund.

Syllabus:	**Hours**
ModuleNo.1:	**10**
Concepts-IATA Area Number-I, II and III-City Codes-Airport Codes-airline Codes- Standard meals and Codes- CRS/GDS.	
ModuleNo.2:	**10**
Travel Classes and class codes: Fare types, normal and special fares. Computerized and manual ticketing, Accurate ticketing as a specified in the IATA ticketing hand book (THB)-TIM-OAG-Miscellaneous charges order (MCO), prepaid ticket advice (PTA).	
Module No.3:	**12**
Fare construction Terminology- Global Indicators-Sales Indicators-Types of Journeys- One way Trip-Round Trip-circle Trip-Open Jaw-Origin open jaw-Turn around open jaw-Stop over-Transfer point-ARNK-Alligators neck-one Country Rule.	
ModuleNo.4:	**14**
Basic Principles of International Fares and Ticketing-Currency System-Rule-NUC-MPM-TPM-EMA-EMS-HIP-AF-BHC-IROE-LCF-Problems on Inbound and outbound-Half RT fare and E-Ticket.	
ModuleNo.5:	**10**
Amadeus: PNR Generation-Encoding and Decoding –Time Availability-Seat availability-Time table-Requests-Meal-seat-Refund-cancellation (Theory and Practical).	

Reference books:

1. Jitendra K Sharma-Flight Reservation and Airline Ticketing, Kanishka Publishers and distributors, New Delhi.
2. M Unnikrishnan-Air Cargo and Airport handling,A Manual for Beginners.
3. Dr.Jagmohan Negi-Travel agency and Tour operation, Kanishka Publishers, Distributors,New delhi.
4. Mohinder Chand-Travel Agency management, Anmol publications PVT Ltd,.New Delhi.
5. IATA hand book on Ticketing

Web Links:

https://www.altexsoft.com/blog/airline-ticketing/

Video Contents:

https://www.iata.org/en/training/subject-areas/fares-ticketing-courses/
https://www.flightslogic.com/airline-ticketing-system-software.php

Course Articulation Matrix -19L205

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO1	2	1	1	1	1	1	1	1	1	2	1	1	2
CO2	2	2	1	2	1	1	1	2	1	1	2	1	2
CO3	2	2	1	1	2	1	1	1	2	2	1	1	2
CO4	2	1	-	-	-	1	1	1	-	1	-	1	1
CO5	2	1	-	-	-	1	1	1	-	1	-	1	1
WA	**2**	**1.4**	**1**	**1.3**	**1.3**	**1**	**1**	**1.2**	**1.3**	**1.4**	**1.3**	**1**	**1.6**

SC (6) Syllabus for MTTM
Semester - II

Course Code: 19L206	Course Title SC (6): Destination Planning and Development
Course Credit (L:T:P): 4(3:1:0)	Teaching Hours/Week:4
Total Contact Hours:56Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70

Pedagogy: Classroomlecture,tutorials,groupdiscussion,seminar,casestudiesandfield Visit etc.,

Course Outcomes:

CO1: Acquire knowledge on destination development, types, products, selection process.

CO2: Acquire knowledge on the concept of destination planning, tourism potential, economic, social, cultural and environmental considerations.

CO3: Analyse the nature and purpose of destination image development, Case Study of Karnataka.

CO4: Explore the concept, problems and process destination promotion and publicity, Marketing Mix, role of DMO,

CO5:Acquire knowledge on different types of institutional support, WTO Guidelines, rural tourism plan, Tourism Policy, sustainable Tourism destination.

Syllabus:	**Hours**
ModuleNo.1:	**10**
Destination Development - Types of destinations, Characteristics of destinations - Destinations and products - Destination Management Systems - Destination planning guidelines - Destination Selection Process - The Values of Tourism.	
ModuleNo.2:	**12**
Destination Planning Process and Analysis - National and Regional Tourism Planning and Development - Assessment of tourism potential - Planning for Sustainable Tourism Development - Contingency Planning - Economic, Social, Cultural and Environmental considerations - Demand and supply match - Design and innovations.	
Module No.3:	**12**
Destination Image Development - Attributes of Destinations: Person's determined image, Destination	

determined image, measurement of destination image - Destination branding perspectives and challenges-Creating the Unique Destination Proposition -Destination image formation process; unstructured image - Product development and packaging - Destination branding and the web - Case Study of Karnataka as a brand.	
ModuleNo.4:	**12**
Destination Promotion and Publicity - Ten 'A's framework for tourism destinations - The dynamic wheel of tourism stakeholders - Destination Marketing Mix - Destination Competitiveness – Distribution Channels- Marketing Communication and Strategies and Role of DMO's in destination marketing strategies-Case studies.	
ModuleNo.5:	**10**
Institutional Support: Public Private Partnership (PPP) - National Planning Policies for Destination Development- WTO Guidelines for Planners - Role of urban civic bodies: Town planning - Characteristics of rural tourism plan - Environmental Management Systems – Destination Vision- The focus of Tourism Policy: the competitive sustainable Tourism destination-Case studies.	

Reference books:

1. Nigel Morgan, Annette Pritchard & Roger Pride (2001), Destination Branding: Creating the Unique Proposition, Butterworth and Heinemann.

2. Richard W.Butler (2006), The Tourism Area Life Cycle: Applications And Modifications, Channel View Publications.

3. Claire, Haven Tang & Eleri Ellis Jones (2005), Tourism Smes, Service Quality And Destination Competitiveness, CABI Publishing

Web links:

https://coraggiogroup.com/how-to-create-an-effective-destination-planning-process/

Video Contents:

https://www.youtube.com/watch?v=0vn5aOTJCMQ

https://business.tourismsaskatchewan.com/en/blog/destination-development-strategy

Course Articulation Matrix -19L206

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO1	2	1	2	1	2	2	1	2	1	2	1	2	2
CO2	2	1	2	1	1	1	1	1	1	2	1	1	1
CO3	2	1	2	1	1	2	1	1	1	2	1	1	1
CO4	2	1	1	1	1	1	1	-	1	2	-	1	1
CO5	2	1	1	1	2	2	1	1	-	2	1	1	1
WA	**2**	**1**	**1.6**	**1**	**1.4**	**1.6**	**1**	**1.25**	**1**	**2**	**1**	**1.2**	**1.2**

OE (1) Syllabus for MTTM
Semester - II

Course Code: 19L207	Course Title OE(1): Travel and Tourism Management
Course Credit (L:T:P): 4(3:1:0)	Teaching Hours/Week:4
Total Contact Hours:56Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70
Pedagogy: Classroomlecture,tutorials,groupdiscussion,seminar,casestudiesandfield Visit etc.,	
Course Outcomes: CO1: Acquire the knowledge of tourism, tourist, hospitality, tourism system, types, anatomy of tourism and development. CO2: Exemplify the impact of tourism and multiplier effect. CO3: Appraise the features and functions of service providers and IATA rules and regulations. CO4: Identify different types of travel formalities, customs, regulations and insurance. CO5: Illustrate the basic concepts and functions of transportation in tourism.	
Syllabus:	**Hours**
ModuleNo.1:	**10**
Concepts of Tourism-Meaning-Definitions-Visitors-Excursionist-Tourist-Traveller-Hospitality-Nature- Forms –Types of tourism-Tourism System-Purpose of Travel-Travel Motivators-Five 'A'S of Tourism-Historical development of Tourism-Tourism in India.	
ModuleNo.2:	**12**
Impacts of Tourism-Significance of Tourism-Multipliers Effect-Economic-Social-Cultural-Environmental impacts of Tourism (Positive and Negative) - Case Studies.	
Module No.3:	**10**
Travel Intermediaries: Travel agents and Tour operators, types and functions-Tour Packages-Types-Formulation of Tour Packages-Itinerary-Types-Steps in Itinerary preparation-Tour Packaging and Costing- Interrelationship between tour operator and travel agents.-Government rules for getting approval- IATA rules & regulations for accreditation.	
ModuleNo.4:	**12**
Travel Formalities and Regulations: Passport-Visa-Customs-Currency Exchange-Health Regulations and Travel Insurance.	

ModuleNo.5:	**12**
Tourist transport-Air-Road-Water-Rail-essential Features of tourist transport-Civil Aviation in India and its role-Airports Authority of India, Airports in India.	
Reference books: 1. Tourism development – Principles and practices – AK Bhatia 2. Tourism in India – A.K. Bhatia 3. Tourism in India – V.K. Goswamy 4. Tourism principles and practices- Sampad Kumar Swain, Jitendra Mohan Mishra 5. Travel agency management-Mohinder Chand	

Course Articulation Matrix - 19L207

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	1	2	1	1	1	1	1	-	1
CO2	1	1	1	1	1	1	2	1	1	1	-	1
CO3	2	2	1	1	2	2	2	1	2	2	1	1
CO4	2	2	-	-	1	-	-	-	1	1	-	1
CO5	2	1	-	-	1	-	1	-	1	1	-	1
WA	**1.8**	**1.6**	**1**	**1**	**1.4**	**1.3**	**1.5**	**1**	**1.2**	**1.2**	**1**	**1**

HC (8) Syllabus for MTTM
Semester - III

Course Code: 19L301	Course Title HC(8): Accounting for Tourism Industry
Course Credit (L:T:P): 3(2:1:0)	Teaching Hours/Week:3
Total Contact Hours: 42Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70
Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,	
Course Outcomes: **CO1:** Acquire knowledge on the concepts of Characteristics & Management Accounting, Differences between Financial Accounting and Management Accounting. **CO2:** Acquire knowledge on the concept of Financial Statement, Comparative Statements, Statements and Trend Percentages. **CO3:** Analyse the nature and purpose of Fund Flow statement, Cash Flow statement, Problems on preparation of Cash Flow statements and Advantages and disadvantages. **CO4:** Explore the concept, Customers Accounts, Guest Accounts, Creation and Maintenance of Guest Accounts, Correction of errors, Corrections and Allowance, Non-Resident Guests, City Ledger, Advances received in Cash and Paying bills by credit cards. **CO5:** Acquire knowledge on Responsibilities of Front Office Accounting System, Accounts, Folios, Vouchers, Point of Sales (POS), Ledgers, Credit Monitoring, Differences between Ordinary cheques and Travelers cheques, foreign currency, Visitor Tabular Ledger, VTL.	
Syllabus:	**Hours**
ModuleNo.1:	**8**
Introduction to Management Accounting - Definitions – Objectives - Characteristics – Advantages and limitations of Management Accounting - Differences between Financial Accounting and Management Accounting.	
ModuleNo.2:	**8**
Analysis of Financial Statements - Meaning – Types – Tools of Financial Statement Analysis – problems on Comparative Statements, Common Size Statements and Trend Percentages.	
Module No.3:	**8**
Fund Flow Statement and Cash Flow Statement - Meaning of Fund Flow statement – utility of fund flow statement – Advantages and disadvantages – Simple problems on preparation of Fund flow	

statement - meaning of Cash Flow statement – advantages and Limitations of Cash Flow statements – Differences between Fund Flow statement and Cash flow statement – Problems on preparation of Cash Flow statements as per the accounting standards.	
ModuleNo.4:	**8**
Multiple Accounts - Accounts of Customers – Guest Accounts - Creation and Maintenance of Guest Accounts – Correction of errors – Corrections and Allowance – Accounts of Non-Resident Guests – City Ledger – Advances received in Cash – Paying bills by credit cards.	
ModuleNo.5:	**10**
Front office Account System- Responsibilities of Front Office Accounting System – General concepts of Front office accounting – Accounts – Folios – Vouchers – Point of Sales (POS) – Ledgers – Credit Monitoring – Methods of Settlement of Accounts – Differences between Ordinary cheques and Travellers cheques – Procedure for accepting foreign currency – Visitor Tabular Ledger – Posting procedure of VTL.	
Text books: 1. Management Accounting – Greg Shields 2. Financial Management – I. M Pandey 3. Financial Management – Prasanna Chandra 4. Management Accounting – Khan and Jain 5. Hotel Accounting – Anil Kathuria 6. A text book on Hotel Accounting – Shyam Lal Arora **Web link:** 1. https://onlinedegrees.und.edu/blog/financial-accounting-vs-managerial accounting. 2. https://corporatefinanceinstitute.com/resources/accounting/analysis-of-financial-statements **Video Content:** **1.** https://www.investopedia.com/terms/f/financial-statement-analysis.asp **2.** https://www.youtube.com/watch?v=ny3wWdAEfPE	

Course Articulation Matrix - 19L301

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	-	1	2	1	2	-	2	1	2
CO2	2	-	2	2	1	2	2	1	2	-	2	1
CO3	2	1	-	1	2	-	1	2	2	-	2	2
CO4	2	2	2	1	1	2	1	1	-	2	1	-
CO5	2	2	1	2	-	2	-	2	1	1	2	1
WA	**2**	**1.75**	**1.5**	**1.5**	**1.25**	**2**	**1.25**	**1.6**	**1.66**	**1.66**	**1.6**	**1.5**

HC (9) Syllabus for MTTM
Semester - III

Course Code: 19L302	Course Title HC(9): International Tourism Destinations
Course Credit (L:T:P): 3(2:1:0)	Teaching Hours/Week:3
Total Contact Hours: 42Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70

Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,

Course Outcomes:

CO1: Acquire knowledge on the concepts of Tourism Destination in activities in USA, Canada, Mexico West Indies, Brazil-Argentina, Venezuela and Colombia.

CO2: Acquire knowledge on the concept of Tourism Destination in activities in England, Italy, France-Germany, Austria, Switzerland, Finland and Spain.

CO3: Acquire knowledge on the concept of Tourism Destination in Egypt, Kenya, Tanzania South Africa and Ethiopia.

CO4: Acquire knowledge on the concept of Tourism Destination in UAE-Turkey-Iran –Iraq and Saudi Arabia.

CO5: Acquire knowledge on the concept of Tourism Destination in India - China-Japan-Singapore-Malaysia-Thailand-Indonesia-Sydney-Canberra and New Zealand.

Syllabus:	**Hours**
ModuleNo.1:	**8**
Tourism Geography of North America/South America-Tourism Destination and activities in USA-Canada-Mexico –West Indies-Brazil-Argentina-Venezuela and Colombia.	
ModuleNo.2:	**8**
Tourism Geography of Europe- Tourism Destination and activities in England-Italy-France-Germany-Austria-Switzerland-Finland and Spain.	
Module No.3:	**8**
Tourism Geography of Africa- Tourism Destination and activities in Egypt-Kenya-Tanzania South Africa and Ethiopia.	
ModuleNo.4:	**8**
Middle East Tourism Destination and activities in UAE-Turkey-Iran –Iraq and Saudi Arabia.	
ModuleNo.5:	**10**
Tourism Geography of Asia and Australia- Tourism Destination and activities in India - China-Japan-Singapore-Malaysia-Thailand-Indonesia-Sydney-Canberra and New Zealand.	

Text books :

1) Travel Geography, Burton and Rosemary Longmen Edn. 1999.
2) Worldwide destination, Geography of Travel and Tourism by Cooper, Chris and Bomifade.

3) Geography of Travel and Tourism, Hudson, Lyods and Jackson,Delmar Publishers 1999.
4) International destinations by Perlitz, Lee and Elliots, Prentic Hall Edn. 2001.
5) World Geography – By Majid Hussain

Web link:

1.https://www.tandfonline.com/doi/full/10.1080/14616688.2020.1826571
2. https://www.taylorfrancis.com/chapters/mono/10.4324/9780429259302-25

Video Content:

1. https://www.youtube.com/watch?v=AOUK3Oit86o
2.https://www.asiaeducation.edu.au/curriculum/geography/details/special-places

Course Articulation Matrix - 19L302

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	1	1	2	1	-	2	1	-	1
CO2	2	2	1	2	-	2	1	2	1	1	1	1
CO3	2	2	-	1	2	1	-	1	2	2	1	2
CO4	2	1	2	1	2	-	2	2	-	1	2	-
CO5	2	2	1	-	1	2	1	2	1	-	1	2
WA	**2**	**1.6**	**1.5**	**1.25**	**1.5**	**1.75**	**1.25**	**1.75**	**1.5**	**1.25**	**1.25**	**1.5**

HC (10) Syllabus for MTTM
Semester - III

Course Code: 19L303	Course Title HC(10): Tourism Research Methods
Course Credit (L:T:P): 2(2:0:0)	Teaching Hours/Week:2
Total Contact Hours: 28 Hrs	Formative Assessment Marks: 10
Duration of Exam: 2 Hours	Semester End Examination Marks: 40
Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,	
Course Outcomes: **CO1:** Acquire knowledge on the concepts of research, types, literature review. **CO2:** Acquire knowledge on the concept of research design, process and hypothesis. **CO3:** Analyse the concepts of sampling, sampling size, techniques and types of data collection. **CO4:** Explore the concept of processing data, classification, coding, tabulation, graphical representation and analysis of data **CO5:** Acquire knowledge on data presentation, report writing.	

Syllabus:	**Hours**
ModuleNo.1:	**8**
Introduction to Research, Definition of Research – Characteristics – Purpose of research, Role of research in tourism business, requisites of a good scientific method –components of scientific approach, Types of Research, Research problem, Review of literature, Classification, Purpose and Sources of literature, Steps in Research.	
ModuleNo.2:	**8**
RESEARCH DESIGN: Definition, Types of research, Steps Involved in Research Process. Research Design-Various Methods of Research Design. Hypotheses: meaning–types, Sources of hypotheses – functions/role of hypotheses.	
Module No.3:	**8**
Sampling and Tools for Data Collection: Concept of Sample, Sample Size and Sampling Procedure, Various Types of Sampling Techniques, Sampling errors, Types of Data: Secondary and Primary, Various Methods of data Collection.	
ModuleNo.4:	**8**
Processing of data: introduction – editing – classification and coding – transcription– tabulation and graphic representation, Statistical analysis of data: introduction –measures of central tendency, mean, mode and median.	
ModuleNo.5:	**10**
Data presentation, Report Writing: Introduction – types of reports – planning report-writing – research report format – steps in report of writing – documentation: footnotes and bibliography.	

Text books :

1. Brunt, P.'Market Research in Travel & Tourism", Butterworth Heinemann: UK,1997.
2. Clark, M.,Riley, M., Wilkie,E. and Wood, R.C. 'Researching and Writing Dissertations in Hospitality and Tourism', ITBP: UK,1998.
3. Jennings, G. 'Tourism Research', John Wiley & Sons,2001.
4. Poynter, J. 'How to research and write a thesis in Hospitality and Tourism: A step by step guide for College students, Wiley: UK1993.
5. Ritchie, J.R.B. and Goeldner, C.R.(eds)'Travel, Tourism and Hospitality Research: A Handbook for Managers and Researchers', Wiley: UK.1994.

Web link:

1.https://www.researchgate.net/publication/307685405RESEARCHMETHODSINTOURISM
2.https://www.futurelearn.com/courses/research-methods-travel-and-tourism

Video Content:

3. https://www.xuetangx.com/course/nankai12091002909intl/12450872
4. https://www.google.com/search?q=Tourism+Geography+of+North+America

Course Articulation Matrix - 19L303

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	2	1	-	2	2	-	1	1	2
CO2	2	1	2	1	2	1	-	2	1	2	1	1
CO3	2	2	-	1	2	1	2	-	1	2	-	1
CO4	2	1	2	-	-	1	2	1	2	1	2	2
CO5	2	3	2	2	1	2	1	-	2	-	1	-
WA	**2**	**1.6**	**1.75**	**1.5**	**1.5**	**1.25**	**1.75**	**1.66**	**1.5**	**1.5**	**1.25**	**1.5**

SC (7) Syllabus for MTTM
Semester - III

Course Code: 19L304	Course Title SC (7): Study tour, Project report and viva voce
Course Credit (L:T:P): 2(0:0:2)	Teaching Hours/Week:- -

Total Contact Hours:-	Formative Assessment Marks: 20 (Viva Voce)
Duration of Exam: -	Semester End Examination Marks: 30 (Study tour report)
Pedagogy: Study tour visit etc.,	
Course Outcomes: CO1: Acquire knowledge on the concepts of tourism and commitment to ethical practices of tourism. CO2: Acquire knowledge on diverse nature of tourism, including culture and place, global/local perspectives	

Course Articulation Matrix - 19L304

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	-	-	2	1	3	1	-	2
CO2	2	1	2	3	1	-	-	1	1	2	1	-
WA	**2**	**1.5**	**1.5**	**2.5**	**1**	**-**	**2**	**1**	**2**	**1.5**	**1**	**2**

SC (8) Syllabus for MTTM
Semester - III

Course Code: 19L305	Course Title SC(8): Tourism Planning and Development
Course Credit (L:T:P): 3(2:1:0)	Teaching Hours/Week:3
Total Contact Hours: 42Hrs	Formative Assessment Marks: 30

Duration of Exam: 3 Hours	Semester End Examination Marks: 70

Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,

Course Outcomes:

CO1: Acquire knowledge on the concepts of Sustainable Tourism, Economic Forces, Principles of Sustainable Tourism, Carrying Capacity, Environmental Impact of Tourism.

CO2: Acquire knowledge on the concept of Tourist Destinations, Destination Amalgam, Tourism Development, Conceptual Tourism Planning, Evolution of Tourism Planning, General Concepts of Planning, Levels and Types of Tourism Planning.

CO3: Analyse the nature and purpose of National Tourism Policy 1982 and 2002, National Action Plan on Tourism, 1992: Special Tourism Area Development Programme, National Tourism Board, National Committee on Tourism.

CO4: Explore the concept Basic Properties of Ecology, Environment, Relationship of Ecology and Tourism – Tourism Activities, Ecology and Environment

CO5: Acquire knowledge on Factors creating the issues of Global Concerns, Rise in Temperature, Melting of Snow Caps, Rise in Sea Level, Monsoon, Global Concern on Tourism, Prevention of Hazards.

Syllabus:	**Hours**
ModuleNo.1:	**8**

Sustainable Tourism: Definition – Forces which promote Sustainable Tourism – Economic Forces which resist Sustainable Tourism – Principles of Sustainable Tourism – Carrying Capacity – The Environmental Impact of Tourism.

ModuleNo.2:	**8**

Tourism Planning: Common Features of Tourist Destinations – Components of Destination Amalgam. –Essential facilities and Services for Tourism Development, Conceptual meaning of Tourism Planning, Evolution of Tourism Planning, General Concepts of Planning, Levels and Types of Tourism Planning.

Module No.3:	**8**

Tourism Policy: Study of National Tourism Policy 1982 and 2002, National Action Plan on Tourism, 1992: Special Tourism Area Development Programme. The concept of National Tourism Board, National Committee on Tourism.

ModuleNo.4:	**8**

Tourism and Ecosystem: Basic Properties of Ecology – Definition of Ecology– Environment – Ecosystem – Relationship of Ecology and Tourism – Tourism Activities and their Linkages to Ecology and Environment

ModuleNo.5:	**10**

Global Concerns – Factors creating the issues of Global Concerns – Rise in Temperature– Melting of Snow Caps – Rise in Sea Level – Monsoon and its Changes – The Impact of Global Concern on Tourism – Prevention of Hazards.

Text books:

1. Singh Ratandeep: Handbook of Environmental Guidelines for Indian Tourism– Kanishka Publishers, New Delhi.
2. A.K.Bhatta Tourism, Principles & practices.
3. Praveen Seth- Successful tourism planning and Management, Cross-section Publications.
4. Dash M.C. (1993) fundamentals of Ecology (New Delhi), Tata McGraw Hill Co.Ltd., Publishing Co.Ltd.)
5. Eagles P.F.J. 1987. The Planning and Management of Environmentally sensitive areas. (U.S., A.Lengman).
6. Page.J. Stephen. Brunt Paul, Connel Jo et al, Tourism A Modern Synthesis, Thomson Publishers, London.

Web link:

1. https://www.tandfonline.com/toc/rthp21/current

2. https://www.slideshare.net/martianne21/tsm-planning-133203310

Video Content:

1. https://www.youtube.com/watch?v=0vn5aOTJCMQ
2. https://www.youtube.com/watch?v=-eMNzlPixGM

Course Articulation Matrix - 19L305

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	2	1	2	-	2	-	1	2
CO2	2	1	-	2	1	2	1	1	2	2	1	1
CO3	2	1	2	-	1	2	-	2	-	1	2	2
CO4	2	-	2	2	2	1	2	1	1	1	-	1
CO5	2	2	1	2	1	2	1	2	1	2	1	2
WA	**2**	**1.25**	**1.5**	**1.75**	**1.4**	**1.6**	**1.5**	**1.5**	**1.5**	**1.5**	**1.25**	**1.6**

SC (9) Syllabus for MTTM
Semester - III

Course Code: 19L306	Course Title SC(9): Event Management
Course Credit (L:T:P): 3(2:1:0)	Teaching Hours/Week:3
Total Contact Hours: 42Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70
Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field visit etc.,	
Course Outcomes: **CO1:** Acquire knowledge on the concepts of Conventions and Expositions, Five C's of event management, Event Planner, Participants, Economy and Society.	

CO2: Acquire knowledge on the concept of MICE, Economic and social significance, TA's and TO's as meeting planner, convention visitor bureaus.

CO3: Analyse the nature and purpose of conference venues- facilities, check-in and check-out procedures, Convention manager functions of CVB, ICPB and ICCA.

CO4: Explore the concept Basic Properties of Management – Goals – Objectives – Targeting, Designing, Budget – Site Selection, Computers and LCD, incentive tour and special requirements

CO5: Acquire knowledge on Case studies: Tourism festivals, Trade Fairs.

Syllabus:	**Hours**
ModuleNo.1:	**8**
History of Meetings Conventions and Expositions, Conceptual foundations of events; Major characteristics; Five C's of event management; Advantages of events- to the Organizer, Event Planner, Participants, Economy and Society; Broad classification of Events.	
ModuleNo.2:	**8**
Introduction to MICE: Components of MICE; Economic and social significance of MICE. Introduction to professional meeting planning- definition, types and roles; associate, corporate & independent meeting planners; TA's and TO's as meeting planner; Convention visitor Bureaus – functions, structure and funding sources.	
Module No.3:	**8**
Events venues: concept and types; Conference venues- facilities, check-in and check-out procedures, requirements; conference room lay-outs; Convention manager; inter-related venues; Introduction to conference facilities in India. Role and functions of CVB, ICPB and ICCA.	
ModuleNo.4:	**8**
The Process of Meeting and Convention Management – Goals – Objectives – Targeting Population – Designing the programme – Budget – Site Selection – F&B – On the management – Services provided at meetings. Meeting Technology – Video Conferencing – Computers and LCD – Technology for meeting attendee, Concept of incentive tour and special requirements for its organization.	
ModuleNo.5:	**10**
Case studies: Tourism festivals: Ellora Festival, Taj Festival, Khajuraho Festival, Desara festival, Hampi Festivals (Any two) Trade Fairs: World Travel Mart, TTF, SATTE.	

Text books:

1) A.K. Bhatia, 'Event Management', Sterling Publishers Pvt.Ltd. Delhi,2001
2) Anton Shone & Bryn Parry, 'Successful Event Management', 2002Dr.Joe Gold Blatt, 'Special Events'
3) Avrich,Barry 'Event and Entertainment Marketing', Vikas, Delhi,1994
4) Panwar J.S, 'Marketing in the New Era', Sage, Delhi, 1998
5) Montgomery, R.J. and Strick, S.K. (1995). Meetings Conventionsand Expositions- An Introduction to the Industry. New York:Van Nostrand Reinhold.
6) Weirich, M.L. (1992). Meetings and Conventions Management.New York: Delmar Publishers Inc.
7) Fenich, G.G. (2005). Meetings, Expositions, Events andConventions- An Introduction to the Industry. New Delhi:Pearson/Prentice Hall.

Web link:

1) https://www.cvent.com/en/blog/events/what-is-event-management
2) https://en.wikipedia.org/wiki/Event_management

Video Content:

1) https://www.youtube.com/watch?v=9P5X_HLLjk8
2) https://www.youtube.com/watch?v=I-XjdcpfXoI

Course Articulation Matrix - 19L306

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	1	2	1	2	1	-	1	2
CO2	2	2	2	1	2	1	1	-	2	1	2	1
CO3	2	1	1	2	1	2	2	2	2	2	1	2
CO4	2	1	2	2	1	1	1	2	-	1	2	-
CO5	2	2	2	-	2	2	1	-	1	2	1	1
WA	**2**	**1.6**	**1.6**	**1.75**	**1.4**	**1.6**	**1.2**	**2**	**1.5**	**1.5**	**1.4**	**1.5**

SC (10) Syllabus for MTTM
Semester - III

Course Code: 19L307	Course Title SC(10): Digital Applications in Tourism (Theory) Digital Applications in Tourism (Practical)
Course Credit (L:T:P): 3(2:0:1)	Teaching Hours/Week:2
Total Contact Hours: 28Hrs (Theory) 14hrs (Practical)	Formative Assessment Marks: 30 (Practical)
Duration of Exam: 3 Hours	Semester End Examination Marks: 70 (Theory)
Pedagogy: Classroom lecture, tutorials, group discussion, seminar, casestudies and field Visit etc.,	
Course Outcomes: **CO1:** Acquire knowledge on the concepts of Concepts of ICTs, benefits & limitations of ICTs, implementations, tourism stakeholders, challenges in the tourism industry. **CO2:** Acquire knowledge on the concept of Geographic information system (GIS), Central	

Reservation System (CRS), Global Distribution System (GDS), Intermediaries, Electronic Payment Systems (EPS), Electronic Fund Transfers (EFT), Electronic Data Interchange (EDI), Enterprise Resource Planning (ERP), Management Information Systems (MIS), Executive Information System (EIS), Knowledge Based systems.

CO3: Analyse the nature and purpose of ICT usage, ICTs in the Hospitality and Airline Industry, GDS and CRS, Business process reengineering (BPR), Bank Settlement Plan (BSP), ICT supported Consumer Relationship Management, social media and mobile services in tourism

CO4: Explore the concept on ICT usage by Demand, Travel news, electronic bulletin boards GDS – automated ticket machines, TV based tourism and booking, videotext system, interactive TV, Voice systems, Social media and ICT, Virtual Tourist Commodities.

CO5: Acquire knowledge on Travel & Tourism Business models & Cyber security, Business intelligence and smart business networks, online business models, website optimization, Online Travel Agency (OTA), travel agency automation, voyager systems, tour package planning systems, managing e-service centre, delivering e-value to customers, cyber crimes, cyber laws and security.

Syllabus:	**Hours**
ModuleNo.1:	**5**
ICT and Tourism: Concepts of ICTs, benefits & limitations of ICTs - implementations of ICTs in tourism, tourism stakeholders and interfaces – challenges in the tourism industry induced by ICTs.	
ModuleNo.2:	**6**
Travel & Tourism Information Systems: Geographic information system (GIS) - Global Positioning System (GPS) – Central Reservation System (CRS), Global Distribution System (GDS), Intermediaries, Infomediaries - Electronic Payment Systems (EPS) - Electronic Fund Transfers (EFT) – Electronic Data Interchange (EDI) - Enterprise Resource Planning (ERP) - Management Information Systems (MIS) - Executive Information System (EIS) - Knowledge Based systems.	
Module No.3:	**6**
ICT usage by Supply side: ICTs in the Hospitality and Airline Industry, GDS and CRS - ICTs in Tour Operators and Travel Agencies, Business process reengineering (BPR) - Bank Settlement Plan (BSP) - ICTs for Tourism Destination Management - ICT supported Consumer Relationship Management - knowledge management, business intelligence - social media marketing in tourism and mobile services in tourism	
ModuleNo.4:	**5**
ICT usage by Demand side: Travel news groups, electronic bulletin boards and chat rooms-access to GDS - automated ticket machines - Information Kiosks - TV based tourism information retrieval and booking, videotext system, interactive TV - Voice input and recognition systems - Social media and ICT influence in travel decision making, Virtual Tourist Commodities.	
ModuleNo.5:	**6**
Travel & Tourism Business models & Cyber security: Business intelligence and smart business networks, online business models - website optimization – Online Travel Agency (OTA), travel agency automation, voyager systems, tour package planning systems, managing e-service centre, delivering e-value to customers - cyber crimes, cyber laws and security.	

Syllabus:	**Hours**
Practical exposure on**:**	**14**

1. Online reservation system & payment system

2. Web designing

3. Blog writing

4. GDS (AMADEUS/GALILEO or related)

Text books:

1) Robson Wendy, Strategic Management and Information Systems Pitman Publishers
2) Elmansic/Navathe, Fundamentals of Database Systems
3) Information technology for tourism,Gary Inkpen
4) Computers today by S.K Basandra

Web link:

1) https://inspirajournals.com/uploads/Album/704121383.pdf
2) https://www.jesoc.com/wp-content/uploads/2020/07/JESOC15_310.pdf

Video Content:

1) https://www.revfine.com/technology-trends-travel-industry
2) https://www.igi-global.com/book/mobile-computing-technology-applications-tourism/258357

Course Articulation Matrix - 19L307

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	2	2	1	2	2	2	-	2
CO2	2	1	2	2	1	2	-	1	2	2	2	2
CO3	2	1	1	2	-	1	1	2	1	-	2	-
CO4	2	2	2	1	2	1	2	2	-	1	1	2
CO5	2	2	1	-	2	2	1	1	2	1	2	1
WA	**2**	**1.6**	**1.6**	**1.5**	**1.75**	**1.6**	**1.25**	**1.6**	**1.75**	**1.5**	**1.75**	**1.75**

OE (2) Syllabus for MTTM
Semester - III

Course Code: 19L308	Course Title OE(2): Heritage of India
Course Credit (L:T:P): 4(3:1:0)	Teaching Hours/Week: 4
Total Contact Hours: 56 Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70
Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,	
Course Outcomes: **CO1:** Acquire knowledge on the concepts of Heritage, Kinds, Tangible and Intangible. **CO2:** Acquire knowledge on the concept of Indian Art, Paintings, Sculptors & Architecture. **CO3:** Analyse the nature and purpose of Indian Dance, festivals & Music. **CO4:** Explore the concept of Caves, Churches, Monuments, Mountain Railways, Heritage Sites& National Parks **CO5:** Acquire knowledge on ASI, Group of Monuments.	
Syllabus:	**Hours**

ModuleNo.1:	8
Definitions, Scope and Nature of Heritage, Kinds of Heritage – Tangible and Intangible. Relationship between Heritage and Tourism. Heritage tourism in India.	
ModuleNo.2:	**12**
Indian Art – Paintings- Different school of Paintings, Sculptors, Architecture – Nagar style of architecture, Dravidian style of architecture, Vesara style of architecture and Indo-Islamic architecture.	
Module No.3:	**12**
Indian Dance forms-Classical-Folk-Comparison between Classical and Folk-Dance festivals in India-Indian Music-Types-Major Fairs and festivals and its importance in Tourism.	
ModuleNo.4:	**12**
UNESCO World Cultural Heritage Sites in India-: Ajanta and Ellora Caves (1983), Churches and Convents of Goa (1986),), Fatehpur Sikri (1986), Group of Monuments at Mahabalipuram (1984) Khajuraho Group of Monuments (1986), Mountain Railways of India (1999), Qutb Minar and its Monuments, Delhi (1993), Sun Temple, Konârak (1984), Taj Mahal (1983).**UNESCO World NaturalHeritage Sites in India:** Great Himalayan National Park Conservation Area (2014), Kaziranga National Park (1985), Keoladeo National Park (1985), Nanda Devi and Valley of Flowers National Parks (1988), Sundarban National Park (1987).	
ModuleNo.5:	**12**
ASI-Functions and Laws related to Heritage protection in India-Study on important heritage tourism destinations of Karnataka – Group of Monuments at Pattadakallu (1987),), Group of Monuments at Hampi (1986), Bijapur and Gulbarga.	

Text books :

1. Heritage and Cultural tourism – Romila chawla
2. Tourism products - Robinet Jacob, Sindhu, Mahadevan
3. Cultural tourism - Harish Badan

Web link:

1) https://indiaculture.gov.in/world-heritage
2) https://www.tourmyindia.com/heritage/

Video Content:

1) https://www.youtube.com/watch?v=FQ1z1397TbY
2) https://www.youtube.com/watch?v=_fcYB3BTJRQ

Course Articulation Matrix - 19L308

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	2	2	2	1	2	1	-
CO2	2	1	1	-	1	2	1	1	2	1	2	2
CO3	2	2	1	2	1	1	2	-	2	-	2	-
CO4	2	1	2	-	2	1	2	1	1	-	1	1
CO5	2	2	1	2	1	2	1	2	-	2	-	2
WA	**2**	**1.6**	**1.4**	**2**	**1.4**	**1.6**	**1.6**	**1.5**	**1.5**	**1.66**	**1.5**	**1.66**

HC (11) Syllabus for MTTM
Semester –IV

Course Code: 19L401	Course Title HC (11): On the job training for a minimum period of 2 months in any tourism / hospitality industry
Course Credit (L:T:P): 3(0:0:3)	Semester End Examination Marks: 100
Pedagogy: --	
Course Outcomes: CO1: Acquire knowledge on the concepts of tourism and learn to appreciate work and its function in the economy. CO2: Acquire knowledge on the concept and how to develop work habits and attitudes necessary for	

job success.

CO3: Analyze the nature and purpose of developing communication, interpersonal and other critical skills in the job interview process.

CO4: To expose the students to understand the working of the organization/ company /industry and take up an in-depth study of an issue / problem in the area of specialization

Course Articulation Matrix - 19L401

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	1	3	-	-	2	3	1	3	2
CO2	2	-	-	2	3	2	2	1	3	2	1	3
CO3	2	1	2	1	-	2	-	1	3	2	-	2
CO4	3	2	3	2	3	2	2	2	1	2	3	2
WA	**2.5**	**1.33**	**1.75**	**1.5**	**3**	**1.5**	**2**	**1.5**	**2.5**	**1.75**	**2.3**	**2.25**

HC (12) Syllabus for MTTM
Semester –IV

Course Code: 19L402 — Course Title HC (12): Training report and Viva voce.

Course Credit (L:T:P): 3(0:0:3) — Semester End Examination Marks: 100

Pedagogy: --

Course Outcomes:

CO1: Analyze practical and managerial skills in the working environment their ability to apply them effectively.

CO2: Analyse the ability to apply relevant technology for the production and management of tourism experiences

Course Articulation Matrix - 19L402

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	-	2	1	1	1	3	2	3	2
CO2	3	3	3	2	3	-	2	1	2	2	3	2

WA	**2**	**2.5**	**2**	**2**	**2.5**	**1**	**1.5**	**1**	**2.5**	**2**	**2**	**2**

HC (13) Syllabus for MTTM
Semester – IV

Course Code: 19L403	Course Title HC(13): Start up& Entrepreneurship Development
Course Credit (L:T:P): 2(2:0:0)	Teaching Hours/Week:2
Total Contact Hours: 28Hrs	Formative Assessment Marks: 10
Duration of Exam: 2 Hours	Semester End Examination Marks: 40
Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,	
Course Outcomes: CO1: Acquire knowledge on the concept of entrepreneurship and the motivations and also the various types of entrepreneurships. CO2: Acquire knowledge on the concept, of various ideas to start up and to understand the environmental and competitive advantages and their relevance in tourism industry. CO3: Analyze the nature and purpose of legal structures and types of Legal Structures, Entity registration process CO4: Explore the concept, problems and process on financial Basics, financing and management of working capital CO5: Acquire knowledge on importance of business plan before starting any business and marketing strategies for better business plan.	
Syllabus:	**Hours**
ModuleNo.1:	**5**
Entrepreneurship- Definition, Role and expectation. Entrepreneurial motivations, Types; Characteristics, functions and importance of Entrepreneurship, opportunities in tourism; Entrepreneurial traits and qualities; A brief study of forms of Business Organization – sole trading partnership, limited liability, co-operative, Partnership producers' companies – public private partnership – steps involved in establishing a new tourism enterprise.	
ModuleNo.2:	**6**
Start-up Idea: How to get a start-up idea, Idea assessment. Identifying target segment and Market Segment: Understanding target segment, sizing the market. Analysing Environment and Competitive	

advantage: Analysing the environment, Understanding the industry (Porter's 5 force model), Competitive Advantage, arts, Functions of management and their relevance in tourism industry - Types of management.

Module No.3:	**5**

Building a Legal Structure: Introduction, Common legal mistakes, Types of Legal Structures, Entity registration process, choosing a base location, Selecting legal expert. Permits Registration and Compliances, Intellectual Property Rights, Importance and Types, IP registration process, Contracts: Key aspects, Founder and Employee agreement, Vender and customer contracts.

ModuleNo.4:	**6**

Understanding Financial Basics: Introduction to Financial Basics, MIS, Financial Key Performance Indicators, Working Capital Management: Introduction, Operating Cycle, Financing and Management of Working Capital, Vendor contracts, Financial management and long term investments, Capital Structure and Taxation, Break Even Analysis,

ModuleNo.5:	**6**

Business Planning: Components of BP, Importance of BP, Elements of BP, Format of BP, building an effective BP, Marketing strategy for an effective BP, Building BP Projections. Funding Overview: Seeking external funding, Funding stages, Qualities to look for investors, approaching investors. Valuation: Decoding Valuation, Valuation and dilution, Cap tables. Pitching and Term sheet: Investors pitch, Components of a pitch, Term Sheet and Post Term Sheet, Program completion. Face book for business.

Text books :

1. Entrepreneurship Development by S. Anil Kumar, S.C. Poornima M.K.Abraham & K. Jayashree.

2. Entrepreneurship & Small Business Management by C.B. Gupta & Khanka.

Recommended for Reference:

- Xcess' Board of Editors, Guide to Starting a Travel Agency and Tour Operation Business – The Business of Tourism, XcessInfostorePvt. Ltd. (2013).
- Roy A. Cook D.B.A, Laura J. Yale Ph.D. Emerita and Joseph J. Marqua, Tourism: The Business of Travel (4th Edition), ISBN-13: 978-0137147298

Weblink:

- https://www.oberlo.com/blog/what-is-entrepreneurship
-

https://franchise.littlemillennium.com/?utm_medium=adwords&utm_campaign=esearch&utm_source=nfranchise&utm_content=640094660116&utm_term=home%20franchise%20business&gclid=CjwKCAiAy_CcBhBeEiwAcoMRHBObzJ3ITWvu9CgnKsZYbGeSOCVYlBMJpUv85fbSc2y8p7j0xIGkxRoC9ToQAvD_BwE

Video Content:

1. https://www.youtube.com/watch?v=MdNNGfoxrqA
2. https://www.youtube.com/watch?v=4ti_uK60nLk

Course Articulation Matrix - 19L403

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	2	1	2	1	2	-	-	2
CO2	2	2	2	1	2	1	3	2	3	1	2	3
CO3	2	2	1	3	-	1	-	1	2	1	2	2
CO4	2	2	1	-	-	-	2	1	2	1	-	1

CO5	2	2	2	1	-	-	2	2	3	3	3	1
WA	**2**	**2**	**1.5**	**1.66**	**2**	**1**	**2.25**	**1.4**	**2.4**	**1.5**	**2.3**	**1.8**

SC (11) Syllabus for MTTM
Semester - IV

Course Code: 19L404	Course Title SC (11): Project report and Viva voce
Course Credit (L:T:P): 4(3:1:0)	Formative Assessment Marks: 30
	Semester End Examination Marks:70 (Project report-50, viva-20)
Pedagogy:--	
Course Outcomes: CO1: Analyze practical and managerial skills in the working environment their ability to apply them effectively. CO2: Analyze the ability to apply relevant technology for the production and management of tourism experiences	

Course Articulation Matrix - 19L404

PO / CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	-	-	1	3	3	2	2	-	2	1
CO2	2	2	1	-	3	1	1	1	2	1	1	1
WA	**2**	**1.5**	**1**	**-**	**2**	**2**	**2**	**1.5**	**2**	**1**	**1.5**	**1**

SC (12) Syllabus for MTTM

Semester – IV

Course Code: 19L405	Course Title SC(12): Personality Development & Soft skills
Course Credit (L:T:P): 2(2:0:0)	Teaching Hours/Week:2
Total Contact Hours: 28Hrs	Formative Assessment Marks: 10
Duration of Exam: 2 Hours	Semester End Examination Marks: 40
Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,	
Course Outcomes: CO1: Acquire knowledge on the concept of Personality Development and dimensions of personality. CO2: Acquire knowledge on the concept, Attitude & Motivation Attitude and the Significance of positive attitude. CO3: Analyze the advantages of Do's and Don'ts to develop positive self esteem and interpersonal behavior relationships CO4: Explore the concept and importance of Body language and management of stress and conflicts CO5: Acquire knowledge on art of participating in Group Discussion and facing personal interview.	
Syllabus:	**Hours**
ModuleNo.1:	**5**
Introduction to Personality Development. The concept of personality – Dimensions of personality –The concept of success and failure: What is success? Hurdles in achieving success - Overcoming hurdles - Factors responsible for success – What is failure - Causes of failure. SWOT analysis.	
ModuleNo.2:	**6**
Attitude & Motivation Attitude - Concept - Significance - Factors affecting attitudes – Positive attitude – Advantages –Negative attitude- Disadvantages - Ways to develop positive attitude – Differences between personalities having positive and negative attitude. motivation - Significance - Importance of self- motivation- Factors leading to de-motivation.	
Module No.3:	**6**
Self-esteem: Term self-esteem - Symptoms - Advantages - Do's and Don'ts to develop positive self-esteem – Low self-esteem - Symptoms - Personality having low self esteem - Positive and negative self esteem. Interpersonal Relationships – Defining the difference between aggressive, submissive and assertive behaviours - Lateral thinking.	
ModuleNo.4:	**6**
Other Aspects of Personality Development- Body language - Problem-solving - Conflict and Stress Management - Decision-making skills - Leadership and qualities of a successful leader – Character building -Team-work – Time management - Work ethics –Good manners and etiquette.	
ModuleNo.5:	**5**

Employability Quotient Resume building- The art of participating in Group Discussion – Facing the Personal (HR & Technical) Interview -Frequently Asked Questions - Psychometric Analysis - Mock Interview Sessions.

Text books :

1. Tata McGraw-Hill 1988. 2. Heller, Robert. Effective leadership.
2. Mile, D.J Power of positive thinking. Delhi. Rohan Book Company, (2004).

Recommended for Reference:

1. Andrews, Sudhir. How to Succeed at Interviews. 21st (rep.) New Delhi.
2. Essential Manager series. Dk Publishing, 2002 3. Hindle, Tim. Reducing Stress. Essential Manager series. Dk Publishing, 2003
3. Lucas, Stephen. Art of Public Speaking. New Delhi. Tata - Mc-Graw Hill. 2001
4. Pravesh Kumar. All about Self- Motivation. New Delhi. Goodwill Publishing House. 2005.
5. Smith, B . Body Language. Delhi: Rohan Book Company. 2004

Web link:

1. https://iamkanikamodi.medium.com/art-of-participating-in-group-discussions-7e74cc78de9
2. https://www.tandfonline.com/doi/full/10.1080/2331186X.2020.1738184
3. https://www.researchgate.net/publication/353331440_Understanding_the_Dimensions_of_Personality
4. https://pages.uoregon.edu/gsaucier/Saucier%202009%20Compass.pdf

Video Content:

1. https://www.youtube.com/watch?v=dhYoZ4lORYA
2. https://www.youtube.com/watch?v=3w32jIsRlsw

Course Articulation Matrix - 19L405

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	1	2	1	3	2	2	1	2
CO2	2	1	2	2	1	1	1	1	1	1	1	3
CO3	2	2	1	2	3	1	1	1	1	1	1	1
CO4	2	1	2	2	1	3	1	1	2	1	1	3
CO5	2	2	1	1	1	1	1	1	2	1	1	1
WA	**2**	**1.6**	**1.6**	**1.8**	**1.4**	**1.6**	**1**	**1.4**	**1.6**	**1.2**	**1**	**2**

SC (13) Syllabus for MTTM
Semester – IV

Course Code: 19L406	Course Title SC(13): Wellness Tourism
Course Credit (L:T:P): 3(2:1:0)	Teaching Hours/Week:3
Total Contact Hours: 42Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70
Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,	
Course Outcomes: CO1: Acquire knowledge on the concept of origin and historical development of wellness tourism over ages and health as a motivator to travel. CO2: Acquire knowledge on the concept of factors influencing health and wellness of the tourism and forms of health tourism CO3: Analyse the advantages of Mind and Spirit relationship importance of Ayurveda, Yoga & Naturopathy CO4: Explore the concept of yoga and meditation and development of yoga and meditation in India CO5: Acquire knowledge on concepts of Medical tourism and benefits of medical tourism, Economics of medical tourism	
Syllabus:	**Hours**
ModuleNo.1:	**8**
Origin and development of wellness tourism over ages - health as a motivator to travel, - Ancient canters of healing and bath. - Concept, Definitions and Ayurveda, Yoga & Naturopathy dimensions of Health, wellness and well-being –spirituality – Typologies of Health tourism - Factors affecting growth of health tourism.	
ModuleNo.2:	**9**
Leisure, lifestyle and tourism: – Tools for wellness: medicine, therapy, Factors influencing health and wellness tourism. Forms of health tourism- medical tourism, spa tourism, Ayurveda tourism, Yoga & Meditation tourism, holistic tourism, spiritual tourism, Ashram tourism.	
Module No.3:	**8**
Concept and Dimensions of holistic health care: – the body, Mind and Spirit relationship. AYUSH-, Siddha, Unani, Homoeopathy, Aromatherapy.	
ModuleNo.4:	**9**
Yoga and Meditation: Origin and development of yoga and meditation in India. Different forms of yoga	

and meditation. The impact of yoga and meditation in the body and mind. International Yoga Day. Some of the important yoga centers in India.

ModuleNo.5:	**8**

Medical tourism: - concept, typology evolution of Medical Tourism. Benefits of medical tourism. Economics of medical tourism. Global medical tourism scenario. Countries promoting medical tourism. Indian medical tourism, potential and problems, market size and growth.

Text books:

1. Vishnudevananda Swami, The Complete Illustrated Book of yoga.
2. Kulkarni, Sonali (2008) Spa and Health Tourism, Book Enclave, Jaipur.

Recommended for Reference:

1. Smith, M. and Puczko, L. (2009) Health and wellness tourism Sivananda Yoga Vedanta Centre (2000) The New Book of Yoga, Ebury Press.

2. Pruthi , Raj (2006) Medical Tourism in India, Arise Pub, New Delhi

3. Rajagopalan, S., (2006) Health Tourism – An Introduction, The ICFAI University Press, Hyderabad,

Web link:

1. https://www.researchgate.net/publication/307433504_Development_of_Healthcare_and_Wellness_Tourism_Marketing
2. https://www.academia.edu/32529064/Factors_affecting_health_tourism_and_international_health_care_facility_choice
3. https://ijarsct.co.in/Paper630.pdf

Video Content:

1. https://www.youtube.com/watch?v=81uzAbHhX68
2. https://www.youtube.com/watch?v=Pzaai8azbqA

Course Articulation Matrix - 19L406

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	2	3	1	1	2	1	-	1
CO2	2	1	1	2	1	3	1	1	1	1	1	1
CO3	2	1	2	1	2	2	1	1	-	-	-	2
CO4	2	1	1	1	1	1	1	1	2	-	1	2
CO5	2	1	1	2	1	3	3	1	-	-	1	1
WA	**2.2**	**1.2**	**1.4**	**1.8**	**1.4**	**2.4**	**1.4**	**1**	**1.66**	**1**	**1**	**1.4**

SC (14) Syllabus for MTTM
Semester - IV

Course Code: 19L407	Course Title SC(14): Air Cargo Management
Course Credit (L:T:P): 3(2:1:0)	Teaching Hours/Week:3
Total Contact Hours: 42Hrs	Formative Assessment Marks: 30
Duration of Exam: 3 Hours	Semester End Examination Marks: 70
Pedagogy: Classroom lecture, tutorials, group discussion, seminar, case studies and field Visit etc.,	
Course Outcomes: CO1: Acquire knowledge on the concept of origin and historical development of Air Cargo CO2: Acquire knowledge on the concept of Procedure for Loading and Unloading of Cargo CO3: Acquire knowledge on the elementary theories of flight such as theory of gravitation, condition equilibrium. CO4: Explore the concept of Equipment used near the Aircraft CO5: Acquire knowledge on Logistics Management	
Syllabus:	**Hours**
ModuleNo.1:	**8**
Introduction to Air Cargo - Definition and Abbreviation of Air Cargo – History of Air Cargo - Types of Goods/ Products shipped by Air – Characteristics of Air Cargo – Trends and Performance of Air Cargo in Asia.	
ModuleNo.2:	**9**
Loading of Cargo - Procedure for Loading and Unloading of Cargo – Export-Import License – Types and Nature of Cargo – Sea Cargo – Introduction – an overview of Sea Cargo industry	
Module No.3:	**8**
Important Components of air Cargo Planes and their functions - Elementary theory of Flight – Theory of Gravitation – Condition of Equilibrium – Load and Trim – Limitations of Cargo Carrying Capacity.	
ModuleNo.4:	**8**
Airport Familiarization for Air Cargo Handling - Equipment used near the Aircraft – Engineering and Commercial equipment – Special Service codes – Transportation times (Flying time).	
ModuleNo.5:	**9**
Overview of Logistics Management - Origin of Logistics – Need for logistic Management -Types of Logistics – Essentials of Logistics in International Trade – case studies on FedEx, UPS, DHL,Cathay	

Pacific, Lufthansa, Emirates, Menzies Aviation Bobba.

Text books:

1. Air Cargo Management – Unnikrishnan

2. Air Cargo Management; Air Freight and the Global Supply Chain – Michael Sales

Recommended for Reference:

1. Air Cargo Freight – Patrick Kinley

2. Logistics Management – Rakesh Singh and Satish C. Ailawadi

3. Supply Chain and Logistics Management – Closs and Cooper

Web link:

1. https://www.princeton.edu/~ota/disk3/1982/8231/8231.PDF
2. https://www.portofmelbourne.com/wp-content/uploads/sr-cargo-types.pdf
3. https://web.mit.edu/16.00/www/aec/flight.html
4. http://www.mcw.gov.cy/mcw/dca/dca.nsf/All/4E568FB5C5A86958C22579B9003B3F83/$file/DCA%20203%20R2%20AIRCRAFT%20EQUIPMENT%20LIST.pdf

Video Content:

1. https://www.youtube.com/watch?v=7LTFdmrjT3k
2. https://www.youtube.com/watch?v=nb74_jkr8u0

Course Articulation Matrix - 19L407

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	1	1	-	-	1	1	1	-	1
CO2	2	-	-	1	-	-	-	1	1	2	-	1
CO3	2	-	1	1	-	-	1	1	1	2	-	1
CO4	2	-	-	1	-	-	-	1	1	1	-	1
CO5	2	1	1	1	-	-	1	1	1	2	1	1
WA	**2**	**1**	**1**	**1**	**1**	**-**	**1**	**1**	**1**	**1.6**	**1**	**1**

ಎಸ್. ಬಿ. ಆರ್. ಆರ್. ಮಹಾಜನ ಪ್ರಥಮ ದರ್ಜೆ ಕಾಲೇಜು (ಸ್ವಾಯತ್ತ)
ಪೂಜಾಭಾಗವತ್ ಸ್ಮಾರಕ ಮಹಾಜನ ಶಿಕ್ಷಣ ಸಂಸ್ಥೆ

POOJA BHAGAVAT MEMORIAL MAHAJANA EDUCATION CENTER
PG Wing of SBRR Mahajana First Grade College (Autonomous)
KRS Road, Metagalli, Mysuru – 570016, Karnataka, India

DEPARTMENT OF STUDIES IN BIOCHEMISTYRY
SCHOOL OF LIFE SCIENCES

PROCEEDINGS OF THE BOARD OF STUDIES MEETING

The meeting of the Board of Studies for M.Sc. Biochemistry program was held on 26th August 2023 at 10 am at DoS in Biochemistry, School of Life Sciences, Pooja Bhagavat Memorial Mahajana Education Centre, PG wing of SBRR Mahajana First Grade College (Autonomous), K.R.S. road, Metagalli, Mysuru-570016.

AGENDA:

1. Approval of revised panel of examiners.
2. Approval of the revised syllabus.
3. Incorporating UGC MOOC SWAYAM credits in the marks card and cumulative transcript.
4. Students can opt only Project work (10 credits, Hard Core) for 4th semester.
5. Any other matter with the permission of the chair.

RESOLUTIONS:

The board unanimously approved:

1. the revised panel of examiners.

2. the syllabus for M.Sc. Biochemistry program with Outcome Based Education to be implemented.

3. that:
   If a student chooses any UGC-MOOC courses (offered from SWAYAM), the respective credits can be considered as an add-on course. The credits of the same will be reflected in the transcript.

4. that the fourth semester could include only Project work (10 credits, hard core) provided the required credits from hard core, soft core and open elective for the completion of M.Sc. Biochemistry are obtained in the first, second and third semesters.

Any other:
The board unanimously approved:

5. that the practical Courses, Internship and dissertation shall be evaluated with viva voce (maximum of 12 students per batch in a course of 6 hours examination) during the end semester examination (in addition to the continuous internal assessment).

6. that these revisions could be applied for the prospective semesters of the current class/batch and for the subsequent batches.

CHAIRPERSON
BoS/BoE in Biochemistry
SBRR Mahajana First Grade College (Autonomous)
PG Wing-Pooja Bhagavat Memorial Mahajana Education Centre
Metagalli MYSURU-570016

Final.

Sl. No.	Member	Name and address	
1	Chairperson	**Dr. Mahadesh Prasad AJ, Professor,** DoS in Biochemistry School of Life Sciences, SBRMFGC (Autonomous) Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru	26/8/23
2	Expert Member	**Dr. S. R. Ramesh, Chief Scientist,** School of Life Sciences SBRMFGC (Autonomous), Pooja Bhagavat Memorial Mahajana, Education Centre, Mysuru	
3	Member	**Dr. Girish Chandran, Coordinator,** DoS in Biochemistry School of Life Sciences, SBRMFGC (Autonomous) Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru	
4	Member	**Dr. Kiran B.** , Assistant Professor, DoS in Microbiology School of Life Sciences, SBRMFGC (Autonomous) Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru	26/8/23
5	University Nominee	**Dr. Gopal Marathe K.,** **Professor,** DoS in Molecular Biology University of Mysore, Mysuru	26/08/2023
6	Member from another College	**Mr. Bhargava C.S., Assistant Professor,** Dept. of Biochemistry, Maharani's Govt. Science College (Autonomous), Mysuru	26/08/23
7	Expert Member from External University	**Dr. Naveen Y.P.,** Assistant Professor Dept. of Biochemistry, Adi Chunchanagiri University, Nagamangala, Mandya	Online
8	Expert Member from External University	**Dr. Kumar J.R.,** Professor JSS AHER, Mysuru	26/8/23
9	Industry Member	**Mr. Sagar Krishna Bhat,** Molecular Biologist KAYPEEYES BIOTECH Pvt. Ltd. 13 & 14, Food Industrial Area, Metagalli, Mysuru 16	—
10	Alumni Member	**Ms. Milana C.,** Clinical Data Manager Starmark Software, Mysuru	—

The BoS chairperson thanked all the members for their active participation and constructive suggestions.

CHAIRPERSON
BoS/BoE in Biochemistry
SBRR Mahajana First Grade College (Autonomous)
PG Wing-Pooja Bhagavat Memorial Mahajana Education Centre
Metagalli MYSURU-570 016

POST-GRADUATE WING OF SBRR MAHAJANA FIRST GRADE COLLEGE

(Autonomous)

Accredited by NAAC with 'A' grade

Pooja Bhagavat Memorial Mahajana Education Centre

K.R.S. Road, Metagalli, Mysuru-570016.

Affiliated to University of Mysore.

DEPARTMENT OF STUDIES IN BIOCHEMISTRY

REGULATIONS
2023-2024

UPDATED REGULATIONS FOR Outcome Based Education (OBE) AND CONTINUOUS ASSESSMENT GRADING PATTERN (CAGP) FOR

M.Sc., BIOCHEMISTRY PROGRAMME WITH EFFECT FROM 2022-23 and 23-24
PREAMBLE

The University Grants Commission (UGC) has stressed on speedy and substantive academic and administrative reforms in higher education for promotion of quality and excellence. The Action Plan proposed by UGC outlines the need to consider and adopt Semester System, Choice Based Credit System (CBCS), and Flexibility in Curriculum Development and Examination Reforms in terms of adopting Continuous Evaluation Pattern by reducing the weightage on the semester- end examination so that students enjoy a de-stressed learning environment. Further, UGC expects that institutions of higher learning draw a roadmap in time bound manner to accomplishthe above.

ABOUT THE COURSE

The M.Sc., Biochemistry course of the University of Mysore is approved by the University Grants Commission. The syllabus is designed to provide a holistic insight into the subject by experts of the University and was adopted for teaching in the Centre. The Department is well furnished and provided with state-of-the-art laboratory facilities. The Department has highly qualified andexperienced faculty for the students to learn and experiment, hands on, with techniques of great relevance to current day bio industries. Besides, the Centre also invites eminent Scholars, Scientists and Professors from UOM, CFTRI, DFRL and other institutions for special lectures to enlighten students on most recent developments in the subject. The students are also encouraged to take part in scientific seminars, group discussions and quiz competitions apart from the other extracurricular activities. Our students have won prizes in intercollegiate essay, debate and music competitions.

OBJECTIVE

The Department makes it their mission to provide socially and industrially relevant post- graduate education and training. The Department also undertakes basic and applied research in the area of Biochemistry as related to the sustainability of the Earth Ecosystem.

The Department endeavors to build and enhance the capabilities of the future generation by providing quality education that provides a deep insight into the subject that can be exploited to build sustainable bio-enterprises. The Department also strives to produce technically highly qualified and skilled scientists to help the bio-industries.

1. TITLE AND COMMENCEMENT

These Regulations shall be as per the University of Mysore regulations for Choice Based Credit System (CBCS) and Continuous Assessment Grading Pattern (CAGP) for M.Sc., Biochemistry program. These Regulations shall come into force from the academic year 2019.

2. PROGRAM OFFERED

(1) **M.Sc.,**: Biochemistry

3. ABOUT THE ASSESSMENT AND CREDITS:

Credit Distribution: The Choice Based Credit System (CBCS) comprises Hard Core, Soft Core subjects for Biochemistry Students and Open Elective for students other than Biochemistry.

Following shall be the minimum and maximum subjects per semester:

The credit pattern is Lecture (L); Tutorial (T); Practical (P); (L: T: P) Pattern.

Course is of 4 credits, and the different credit distribution patterns in L: T: P format is:

0 : 0,	2 : 1,	1 : 2,	0 : 3,	3 : 0,
1 : 1,	2 : 0,	0 : 2,	1 : 0,	0 : 1,
2 : 2,	4 : 0,	0 : 4,	1 : 3,	3 : 1,

The concerned BoS will choose the convenient credit pattern for every course based on the requirement.

One semester period is 16 weeks of teaching and learning.

Duration of semester is 20 weeks that includes semester end examinations.Credit Pattern:

Hard Core: 3 – 6 Credits **Soft Core:** 2 – 4 Credits **Open elective:** 4 Credits

Project Work: 6 Credits

Course Type	Credits
Hard Core	Minimum Credits - 42 and Maximum Credits - 52
Soft Core	Minimum Credits – 16
Open Elective	Minimum Credits - 4

- A Candidate can enroll for **maximum of 24 Credits per semester** inclusive of Open Electiveearned from the other Departments.
- A Candidate has to earn a minimum of **76 Credits** for successful completion of Master degree.
- A minimum 76 Credits and additional 18 Credits (76 + 18 = 94 Credits) shall acquire add on Proficiency Diploma.

Continuous Assessment Pattern:

Continuous Assessment	Time Duration	Marks		Minimum 30% and an aggregate of 40% to declare pass
		Max	Min	
C1	1 week to 8 weeks	15	4.5	
C2	9 week to 16 weeks	15	4.5	
C3	Complete 16 weeks	70	21	

Finally, awarding the grades should be completed latest by 24th week of the semester.

4. ELIGIBILITY FOR ADMISSION

Students of Bachelors of Science degree from any UGC recognized Universities in life science subjects with Chemistry or Biochemistry as major subjects are eligible. Students from Foreign National degree will apply through equivalence committee. Minimum percentage of marks is as prescribed by the University of Mysore regulations for admission ie., **45% for general category and 5% relaxation for SC/ST students**.

5. SETTING QUESTIONS PAPERS AND EVALUATION OF ANSWERSCRIPTS

1. Questions papers in three sets shall be set by the internal examiner for a course. Whenever there are no sufficient internal examiners, the chairman of BOE shall get the questions papers set by external examiners.

The Board of Examiners shall scrutinize and approve the question papers and scheme of valuation.

2. (i) There shall be single valuation for all theory papers by internal examiners. In case, the number of internal examiners falls short, external examiners may be invited.

(ii) The examination for Practical work/ Field work/Project work will be conducted jointly by two internal examiners. However the BOE on its discretion can also invite external examiners if required.

5.0 Scheme of Instructions

5.1 A Master's Degree program is of 4/6 semesters-two/three year's duration forregular candidates. A regular candidate can avail a maximum of 8/12 semesters – 4/6 years (in one stretch) to complete Masters' Degree (including blank semesters, if any). Whenever, a candidate opts for blank semester(s)/DROP in a course or in courses or is compelled to DROP a course or courses as per the provision of the regulation, he/she has to study the prevailing courses offered by the department as perthe prevailing scheme, when he/she continues his/her study.

5.2 A candidate has to earn a minimum of 76 credits, for successful completion of Master's degree with a distribution of credits for different courses as given in the following table.

5.3

Course Type	**Credits**
Hard Core	A minimum of 42, but not exceeding 52
Soft Core	A minimum of 16
Open Elective	A minimum of 4

Every course including project work, practical work, field work, seminar, self- study elective should be entitled as hard core or soft core or open elective by the BoS concerned.

Note: Minimum credit requirement for the award of master's degree in specific programmes, refer Annexure III

5.4 A candidate can enrol for a maximum of 24 credits per semester with the approval of the concerned department.

5.5 Only such candidates who register for a minimum of 18 credits per semester in the first two semesters and complete successfully 76 credits in total of the 4 semesters shall be consideredfor declaration of ranks, medals and are eligible to apply for student fellowship, scholarship, free ships and hostel facilities.

5.6 In excess to the minimum of 76 credits for master degree in the concerned discipline / course of study, a candidate can opt to complete a minimum of 18 extra credits to acquire **add on proficiency diploma** in that particular discipline/course along with the masters' degree. In such of the cases wherein, a candidate opts to earn at least 4extra credits in different discipline / courses in addition to a minimum of 76 credits at master level as said above then an **add on proficiency certification** will be issued to the candidate by listing the courses studied and grades earned.

5.7 A candidate admitted to Master Program can exercise an option to exit with Bachelor Honors Degree / PG diploma after earning 40 credits successfully.

6.0. Continuous Assessment, Earning of Credits and Award of Grades

The evaluation of the candidate shall be based on continuous assessment. The Structure for evaluationis as follows:

Assessment and evaluation processes happen in a continuous mode. However, for reporting purposes, a semester is divided into 3 discrete components identified as C1, C2, and C3.

6.1 The performance of a candidate in a course (30:70 pattern) will be assessed for a maximum of 100 marks as explained below:

6.1.1 The first component (C1), of assessment is for 15 marks. This will be based on test/ assignment/seminar/quiz/group discussions, etc., during the first half of the semester; the first 50% of the syllabus will be completed. This shall be consolidated during the 8th week of the semester. Beyond 8th week, making changes in C1 is not permitted.

6.1.2 The second component (C2), of assessment is for 15 marks. This will be based on test/ assignment/seminar/quiz/group discussions etc. The continuous assessment and scores of second half of the semester will be consolidated during the 16th week of the semester. During the second half of the semester the remaining units in the course will be completed.

6.1.2.1 The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) will be proposed by the teacher(s) concerned before the commencement of the semester and will be discussed and decided in the respective Departmental Council. The students should be informed about the modalities well inadvance. The evaluated courses/assignments during component I (C1) and component II

(C2) of assessment are immediately returned to the candidates after obtaining acknowledgement in the register maintained by the concern teacher for this purpose.

6.1.3 Setting question papers and evaluation of answer scripts:

I. Question papers in two sets shall be set by the internal examiner and one set by external examiner for a course. Whenever there are no sufficient internal examiners, The Chairman, BoEshall get the question papers set by external examiners.

Whenever there are no external examiners, The Chairman, BoE shall get the question papers set by internal examiner.

II. The Board of Examiners shall scrutinize and approve the question papers and scheme ofevaluation.

III. (i) There shall be single evaluation for all theory papers by internal examiner and 25% ofthe total scripts will be reviewed by an external examiner.

(ii) The average of first valuation and the review evaluation will be considered as the final marks of the candidate.

(iii) If there is difference of marks in maiden and reviewed evaluation is greater than 15 marks then the script will go for third evaluation by the external examiner and marks awardedin the third evaluation will be final.

(iv) The examination for Practical work/ Field work/ Project work will be conducted jointly by one internal and one external examiner.

(v) If a course is fully of (L=0): T: (P=0) type, then the examination for C3Component will be asdecided by the BOS concerned.

IV. Challenge Evaluation

A student who desires to apply for challenge evaluation shall obtain a Xerox copy of the answer script by paying the prescribed fee within 10days after the announcement ofthe results. He / She can challenge the grade awarded to him/her by surrendering the grade card and by submitting an application along with the prescribed fee to the Controller of Examinations within15 days after the announcement of the results. This challenge evaluation is only for C3 component.

The answer scripts, for which challenge evaluation is sought for, shall be sent to external examiner.
The marks awarded in the challenge evaluation will be final.

6.1.4 In case of a course with only practical component a practical examination will be conductedwith two examiners (one Internal and one external)

A candidate will be assessed on the basis of

a) Knowledge of relevant processes
b) Skills and operations involved
c) Results / products including calculation and reporting.

If external examiner does not turn up then both the examiners will be internal examiners. The durationfor semester-end practical examination shall be decided by the Departmental council.

6.1.5 If **X** is the marks scored by the candidate out of 70 in C3 in theory examination, if **Y** is the marks scored by the candidate out of 70/50/40 in C3 in Practical examination, and if **Z** is the marks scored by the candidate out of 70/50/40 in C3 for a course of (L=0):T:(P=0) type that is entirely tutorial based

course, then the final marks (M) in C3 is decided as per the following table.

6.1.6

L.T.P distribution	**Formula to computeMark (M) in C3**
L:T:P	[(L+T)*X]+[(T+P)*Y]L+2T+P
L:(T=0):P	(L*X)+(P*Y) L+P
L:T:(P=0)	X
L:(T=0):(P=0)	X
(L=0):T :P	Y
(L=0): (T=0):P	Y
(L=0): T:(P=0)	Z

Continuous Formative Evaluation/Internal Assessment (HC, SC & OE)

Credit Distribution: The Choice Based Credit System (CBCS) comprises HardCore, Soft Core subjects for Biochemistry Students and Open Elective for students other than Biochemistry.

Following shall be the minimum and maximum subjects per semester:

The credit pattern is Lecture (L); Tutorial (T); Practical (P); (L: T: P) Pattern.

Course is of 4 credits, and the different credit distribution patterns in L: T: P format is:

0 : 0,	2 : 1,	1 : 2,	0 : 3,	3 : 0,
1 : 1,	2 : 0,	0 : 2,	1 : 0,	0 : 1,
2 : 2,	4 : 0,	0 : 4,	1 : 3,	3 : 1,

The concerned BoS will choose the convenient credit pattern for every course based onthe requirement.

One semester period is 16 weeks of teaching and learning.

Duration of semester is 20 weeks that includes semester end examinations.

Course Type	Credits
Hard Core	Minimum Credits - 42 and Maximum Credits - 52
Soft Core	Minimum Credits – 16
Open Elective	Minimum Credits - 4

Credit Pattern: **Hard Core:** 3 – 6 Credits **Soft Core:** 2 – 4 Credits **Open elective:** 4 Credits

Project Work

- A Candidate can enroll for **maximum of 24 Credits per semester** inclusiveof OpenElective earned from the other Departments.
- A Candidate has to earn a minimum of **76 Credits** for successfulcompletion of a Master's degree.
- A minimum 76 Credits and additional 18 Credits (76 + 18 = 94 Credits) shallacquire add on Proficiency Diploma.

Continuous Assessment Pattern:

The details of continuous assessment (30:70 patterns) are summarized in The following table:

Component	Syllabus in a Course	Weightage	Period of Continuous Assessment	Marks
C1	First 50%	15%	First half of the semester To be consolidated by 8thweek	15
C2	Remaining 50%	15%	Second half of the semester. To be consolidated by 16thweek	15
C3	Semester-end examination (All units of the course)	70%	To be completed during 18th-20th Week.	70

Continuous Assessment	Time Duration	Marks		Minimum 30% and an aggregate of 40% to declare pass
		Max	Min	
C1	1 week to 8 weeks	15	4.5	
C2	9 week to 16 weeks	15	4.5	
C3	Complete 16 weeks	70	21	

Finally, awarding the grades should be completed latest by 24th week of thesemester.

Theory evaluation:

Component – I (C1): Periodic Progress, Progress Reports, test (15%)calculated for 15marks

Component – II (C2): Periodic Progress, seminar, test (15%) calculatedfor 15marks)

Component III: (C3): Final exam (end semester exam for 70marks) (70%)

Practical evaluation:

Component – I (C1): Periodic Progress, Laboratory record and Progress Reports (15%)

Component – II (C2): Results of Work, tour report, assignment, class tests, laboratory exercise and Draft Report (15%)

Component III: (C3): (70%) Practical exams to be conducted for 6 hours, students will prepare reagents and perform the experiments, report to the examiners. A viva voce will be conducted during practical examination for each student and marks are allotted accordingly from the experimental efficiency and viva.

In case a candidate secures less than 30% in C1 and C2 put together in a course, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course.

Minor/ Major Project Evaluation:

Right from the initial stage of defining the problem, the candidate has to submit the progress reports periodically and also present his/her progress in the form of seminars in addition to the regular discussion with the guide. Components of evaluation are as follows:

Component – I (C1): Periodic Progress and Progress Reports (15%) Component – II (C2): Results of Work and Draft Report (15%) Component– III (C3): Final Viva-voce and evaluation (70%).

The report evaluation is for 40% and Viva-voce examination is for 30%.

6.2 In case a candidate secures less than 30% in C1 and C2 put together in a course, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course.

In case a candidate's class attendance in a course is less than 75%, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course.

Teachers offering the courses will place the above details in the Department Council meeting during the last week of the semester, before the commencement of C3, and subsequently a notification pertaining to the above will be brought out by the Chairman of the Department before the commencement of C3 examination. A copy of this notificationshall also be sent to the office of the Director & the Controller of Examinations.

6.3 In case a candidate secures less than 30% in C3, he/she may choose DROP/MAKEUP option.

In case a candidate secures more than or equal to 30% in C3, but his/her grade (G) = 4, as per section 6.9 below, then he/she may be declared to have been conditionally successful in this course, provided such a benefit of conditional clearance based on G=4 shall not be availed for more than 8 credits for the entire program of Master's Degree of two years.

In case a candidate secures more than 30% in C3, he/she may choose DROP/MAKE-UP option.

The candidate has to exercise his/her option immediately within 10 days from the date of notification of results.

A MAKE UP examination for C3 shall be conducted in all the semesters. Candidates can register for the MAKE UP examination within 10 days from the date of notification of results. The MAKE UP examination will be conducted within one month of the notification of the results.

If a candidate is still unsuccessful, A MAKE UP Examination for odd semester courses will be conducted along with next regular odd semester examinations and for even semester courses along with next regular even semester examinations; however, not exceeding double the duration norm in one stretch from the date of joining the course.

6.4 A candidate has to re-register for the DROPPED course when the course is offered again by the department if it is a hard core course. The candidate may choose the same or an alternate core/elective in case the dropped course is soft core / elective course. A candidatewho is said to have DROPPED project work has to re-register for the same subsequently within the stipulated period. **The details of any dropped course will not appear in the grade card.**

6.5 The tentative / provisional grade card will be issued by the Controller of Examinations at the end of every semester indicating the courses completed successfully. This statement will not contain the list of DROPPED courses.

6.6 Upon successful completion of Bachelors Honors/Master's Degree, a final grade card consisting of grades of all courses successfully completed by the candidate will be issued by the Controller of Examinations.

6.7 The grade and the grade point earned by the candidate in the course will be as given below.

Marks(M)	**Grade**	**Grade Point (GP = V x G)**
30-39	4	V*4
40-49	5	V*5
50-59	6	V*6
60-64	6.5	V*6.5
65-69	7	V*7
70-74	7.5	V*7.5
75-79	8	V*8
80-84	8.5	V*8.5
85-89	9	V*9
90-94	9.5	V*9.5
95-100	10	V*10

Here, **P** is the Percentage of marks (P = [(C1+C2) + M] secured by a candidate in a course which is rounded to nearest integer. **V** is the credit value of course. **G** is the Grade and **GP** is the Grade Point.

6.8 A candidate can withdraw any course within ten days from the date of notification of final results. Whenever a candidate withdraws a paper, he/she has to register for the same course in case it is hard core course, the same course or an alternate course if it is soft core/open elective.

A DROPPED course is automatically considered as a course withdrawn.

6.9 Overall Cumulative Grade Point Average (CGPA) of a candidate after successfully completing the required number of credits (76) is given by:

CGPA = ΣGP / Total Number of Credits

7. Classification of Results

The Final Grade Point (FGP) to be awarded to the student is based on CGPA secured by the candidate and is given as follows.

CGPA	**Numerical Index**	**Qualitative Index**
4<= CGPA <5	5	Second Class
5<= CGPA <6	6	
6<= CGPA <7	7	First Class
7<= CGPA <8	8	
8<= CGPA <9	9	Distinction
= CGPA <10		

Overall Percentage = 10* CGPA or is said to be 50% in case CGPA<5

Medium of Instruction

The medium of instruction shall be English. However, a candidate will be permitted to write the examinations either in English or Kannada. This rule is not applicable to languages.

8. Attendance and Conduct

Students SHALL NOT take up any employment/course, part time or full time during their study. Students found violating this rule shall be removed from the course. Minimum attendance of 75% of actual working hours in all the courses is required. A student who does not satisfy the requirements of attendance and conduct shall not be permitted to write examination.

In the case of a candidate who represents his institution/University/Karnataka State/Nation in Sports/NCC/NSS/Cultural or any official activities, shortage of attendance up to maximum of 15 days in a Semester per course may be condoned, based on the recommendation and prior permission of the Head of the Institution concerned.

The Head of the Department shall notify the list of all students who have less than 75% attendance in each course at the beginning of the 16th week of the semester. A copy of the same should be sent to the Controller of Examination of the college.

9. Transfer within University and from other Universities

a) Transfer to a different institution within the University is permitted only at the beginning of the academic year.

b) A Candidate seeking transfer to a different institution within University of Mysore should have completed all the courses/papers of the previous semesters.

c) A Candidate from any other university can join a program of this college only at the beginning of the academic year.

d) A Candidate from other university seeking admission by transfer to the collegeshould have completed all the courses of the previous semesters.

10. Provision for Appeal

If a candidate is not satisfied with the evaluation of C1 and C2 components, he / she can approach the grievance cell with the written submission together with all facts, the assignments, and test papers etc., which were evaluated. He/she can do so before the commencement of semester-end examination. The grievance cell is empowered to revise the marks if the case is genuine and is also empowered to levy penalty as prescribed by the college on the candidate if his/her submission is found to be baseless and unduly motivated. This cell may recommend takingdisciplinary/corrective action on an evaluator if he/she found guilty. The decision taken by the grievance cell is final.

For every program there will be one grievance cell. The composition of the grievance cell is as follows.

1. The Controller of Examinations-ex-officio Chairman / Convener
2. One senior faculty member (other than those concerned with the evaluation of the course concerned) drawn from the department/discipline and/or from the sister departments/sister disciplines.
3. One senior faculty member / course expert drawn from outside the department.

11. Discipline

1) Every student is required to maintain discipline and decorum both inside and outside the campus in accordance with the instructions of the college and also as per the instructions issued by the University of Mysore/Government of Karnataka/UGC from time to time regarding Student Conduct Rules.

2) Any act of indiscipline of a student is first to be considered by the Disciplinary committee of the college for necessary action. If the issue demands more serious consideration, the act of indiscipline will be reported to the concerned authority who will initiate appropriate action.

3) Concerned authority may take necessary actions depending upon the prima facie evidence.

12. Any other issue not envisaged above, shall be resolved by the competent authority of the autonomous college, which shall be final and binding.

Any matter which is not covered under this regulation shall be resolved as per the University of Mysore Regulations in this regard.

Mahajana Education Society (R)
Education to Excel
SBRR Mahajana First Grade College (Autonomous)
Post Graduate Wing
Pooja Bhagavat Memorial Mahajana Education CenterKRS Road, Metagalli, Mysuru

SCHOOL OF LIFE SCIENCES

M.Sc. BIOCHEMISTRY

Choice Based Credit System (CBCS)

Syllabi for M.Sc. Biochemistry

1-4 Semesters

2022-23

PG

DEPARTMENT OF STUDIES IN BIOCHEMISTRY

Motto: Our motto is to provide impetus for education, training, opportunities and work environments that are characterized by honesty, liability, impartiality, and a commitment to understand concepts of life at the Biochemical and Molecular level for all cadres of society.

Vision: Our vision is to obtain a well-defined elucidation of the molecular interactions that underlie both normal physiology and disease states of life forms which is the foundation of etiology, drug designing and personalized medicine. Additionally, our goal is to understand the molecular mechanisms of and to develop new tools, for biology such as biosensors, biomarkers, study models and therapeutic molecules that will enhance the quality of life through better medical care, disease prevention measures, nutrition, and environmentally sound processes.

Mission: Provision of academic environment for promoting the quality of learning and research in biochemistry. To be a diverse, inclusive community that serves students, our professionals and the public through innovative education, individualized advising, holistic mentoring and cutting-edge molecular life science research that creates knowledge and solves real-life problems.

Objectives

To enable students to become Teachers in academia.
To enable motivated researchers in research institutions or industries.
To enable entrepreneurial skills so as to serve the industries as well as initiate ownfirms.

PO: Program outcome:

1. To develop an ability to acquire in-depth theoretical and practical knowledge of Biochemistry
2. To demonstrate an understanding of structure and metabolism of biological macromolecules and to understand the regulation and disorders of metabolic pathways.
3. To gain proficiency in laboratory techniques in biochemistry and biological sciences like immunology, physiology, molecular biology, enzymology and biotechnology.
4. To develop an ability to understand the technical aspects of existing technologies and to provide cost efficient solutions that help in addressing the biological and medical challenges faced by mankind. Additionally, the practical skills are improved which help their research experience among academic or industrial R&D programs.
5. To understand the published literature by using online and offline methods; to be able to apply the scientific method to the processes of experimentation and hypothesis testing. To develop an ability to translate knowledge of Biochemistry to address environmental, intellectual, societal, and ethical issues through innovative thinking and research strategies.
6. To develop an ability to put forward the scientific perception to a person/ community belonging to non-science background. Also, inculcate skills for teaching in academic institutions for undergraduate and postgraduate students.
7. Develop confidence in taking competitive examination in the field of life sciences both in India andabroad so that they can pursue higher education.

Pedagogies employed

1. The regular class room sessions will include the use of black board/ white board,power point presentations, video presentations.
2. The class room teaching will also use additional information and communicationstechnology (ICT).
3. Group discussions about the class and student seminars.
4. Tutorials include interaction with individual student for the preparation of seminars,practical problems.
5. Each student performs experiments as per the protocol in practical sessions.
6. Student seminar/ research paper presentation in each semester.
7. Project work on a small research problem.
8. Literature review in the form of Dissertation and presentation.
9. Invited talks from eminent scientists.
10. Laboratory / industrial visits to understand the real time processing/ functioning of acompany.

List of BoS Members

Sl. No.	Member	Name and address
1	Chairperson	**Dr. Mahadesh Prasad AJ, Professor,** DoS in Biochemistry School of Life Sciences, SBRMFGC (Autonomous) Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru
2	Expert Member	**Dr. S. R. Ramesh, Chief Scientist,** School of Life Sciences SBRMFGC (Autonomous), Pooja Bhagavat Memorial Mahajana, Education Centre, Mysuru
3	Member	**Dr. Girish Chandran, Coordinator,** DoS in Biochemistry School of Life Sciences, SBRMFGC (Autonomous) Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru
4	Member	**Dr. Kiran B.** , Assistant Professor, DoS in Microbiology School of Life Sciences, SBRMFGC (Autonomous) Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru
5	University Nominee	**Dr. Gopal Marathe K., Professor,** DoS in Molecular Biology University of Mysore, Mysuru
6	Member from another College	**Mr. Bhargava C.S., Assistant Professor,** Dept. of Biochemistry, Maharani's Govt. Science College (Autonomous), Mysuru
7	Expert Member from External University	**Dr. Naveen Y.P.,** Assistant Professor and Young Researcher Dept. of Biochemistry, Adi Chunchanagiri University, Nagamangala, Mandya
8	Expert Member from External University	**Dr. Kumar J.R.,** Professor JSS AHER, Mysuru
9	Industry Member	**Mr. Sagar Krishna Bhat,** Molecular Biologist KAYPEEYES BIOTECH Pvt. Ltd. 13 & 14, Food Industrial Area, Metagalli, Mysuru 16
10	Alumni Member	**Ms. Milana C.,** Clinical Data Manager Starmark Software, Mysuru

Course Structure: M.Sc. DEGREE IN BIOCHEMISTRY (September 2023)

Outcome Based Education (OBE)

Minimum Requirements

Semesters	Hard Core (HC)		Soft Core (SC)		Open Elective (OE)		Total	
	Numberof Papers	Credits	Number of Papers	Credits	Number of Papers	Credits	Number of Papers	Credits
I semester	6	19	1	3	-	-	7	22
II semester	4	11	2	5	1	4	7	20
III semester	4	12	2	8	-	-	6	20
IV semester	1	10	1	4	-	-	2	14
Total		52		20		4		76

A Candidate has to earn a minimum of 76 Credits for successful completion of a Master degree. Additional 18 Credits (76 + 18 = 94 Credits) shall acquire add on Proficiency Diploma.

Credits to be earned for Successful award of M.Sc. degree in Biochemistry

	Minimum Required	Obtained
Minimum Credits from Hard Core	42	52
Minimum Credits from Soft Core	16	20
Minimum Credits from Open Elective	04	04
Minimum Total Credits	**76**	**76**

I Semester

Sl. No.	Title of the Paper	Course Type	Credit Pattern			Total Credits
			L	T	P	
1	Fundamentals of Biochemistry	FCHC	3	1	0	4
2	Techniques in Biology	FCHC	3	1	0	4
3	Molecular Cell Biology	FCHC	3	1	0	4
4	Bioorganic and Bioinorganic Chemistry	HC	3	0	0	3
5	**Practical 1A** Experiments in Biological techniques andBioorganic chemistry & Tour Report (Laboratory Visit and Tour Report)	HC	0	0	2	2
6	**Practical 1B** Experiments in Cell Biology, Genetics andBioinorganic chemistry & Seminar	HC	0	0	2	2
	Soft Core (Any One to be selected)					
7	Genetics	FCSC	3	0	0	3
8	Membrane Biology	SC	3	0	0	3
TOTAL MINIMUM CREDITS: 22 6 Hard Core (HC): 19 Credits; 1 Soft Core (SC): 03 credits						

II Semester

Sl. No.	Course	Course Type	Credit Pattern			Total Credits
			L	T	P	
1	Molecular Biology	FCHC	3	1	0	4
2	Enzymology	HC	3	0	0	3
3	**Practical 2A:** (Experiments in Molecular Biology and Energy Metabolism; Laboratory visits and Tour report)	HC	0	0	2	2
4	**Practical 2B:** (Experiments in Enzymology and Research Paper presentation)	HC	0	0	2	2
	Soft Core (Any Two-Four to be selected)					
5	Metabolism of Lipids	SC	3	0	0	3
6	Metabolism of Carbohydrates	SC	3	0	0	3
7	Endocrinology	SC	3	0	0	3
8	Dissertation – Review of Literature	SC	0	0	2	2
	Open Elective papers offered for students of other disciplines					
	OE: Biology for Non-biologists	OE	2	2	0	4
	OE: Nutrition in Health and Disease	OE	2	2	0	4
9	Students of M.Sc. Biochemistry can opt from OE coursesoffered by non-science Master programs (minimum requirement 4 credits)					
TOTAL MINIMUM CREDITS: 20 4 Hard Core (HC): 11 Credits; 2 Soft Core (SC): 06 credits; 1 Open elective (OE): 04 credits						

III Semester

Sl. No.	Course	Course Type	Credit Pattern			Total Credits
			L	T	P	
1	Immunology	FCHC	3	1	0	4
2	Metabolism of Amino Acids and Proteins	HC	3	1	0	4
3	**Practical-3A:** Experiments in Immunology and amino acid metabolism. Study tour and tour report.	HC	0	0	2	2
4	**Practical 3B:** Experiments in Metabolism and Review of Literature.	HC	0	0	2	2
	Soft Core (Any Two -Four to be selected)					
5	Metabolism of Nucleic Acids	SC	3	1	0	4
6	Research Methodology, Biostatistics, and Bioinformatics	SC	3	1	0	4
7	Human Physiology with clinical relevance.	SC	3	1	0	4
8	Internship	SC	0	0	4	4
TOTAL MINIMUM CREDITS: 20 4 Hard Core (HC): 12 Credits; 2 Soft Core (SC): 08 credits						

IV Semester

Sl. No.	Course	Course Type	Credit Pattern			Total Credits
			L	T	P	
1	Research Project Work, Report and Viva Voce	HC	0	0	10	10
	Soft Core (Any one to four to be selected)					
2	Clinical Biochemistry	SC	3	1	0	4
3	Biotechnology	SC	3	1	0	4
4	Plant Biochemistry	SC	3	1	0	4
5	Human Nutrition	SC	3	1	0	4
TOTAL MINIMUM CREDITS: 14 1 Hard Core (HC): 10 Credits; 1 Soft Core (SC): 03 credits						

M.Sc. Biochemistry I Semester	Fundamentals of Biochemistry Course Code: 23F101	FCHC – Foundation Course Hard Core
Total Hours: 48	Credits: 04 (LTP - 3:1:0)	Total Marks: 15+15+70 = 100

Module	Course contents	
1	**Basics of Chemical Bonding and Carbohydrates Bonding:** Covalent bond; coordinate bond; coordinate bond formation in transition metals. Bonding of iron in hemologlobin and cytochromes, cobalt in Vit B_{12}, magnesium in chlorophyll. Special properties of water; Structure and bonding, non-covalent interactions, reactions of carbohydrates. **Carbohydrates**: Structure and classification of carbohydrates, monosaccharides (pentoses, hexoses), disaccharides (lactose, sucrose, maltose) and polysaccharides (starch, cellulose, glycogen and bacterial cell wall polysaccharides) explanations.	12h
2	**Basics of Amino Acids and Proteins** **Aminoacids:** Nomenclature, classification and buffering properties, zwitterionic structure, reactions of Amino acids. **Proteins**: Primary, secondary, tertiary and quaternary structures, protein sequencing. **Factors responsible for protein folding**: Anfinsen's experiment. Non-covalent interactions and S-S bridges in stabilizing the proteins, Denaturation and renaturation of proteins, molten globule, chaperones.	12h
3	**Basics of Lipids & Enzymology Lipids:** Classification & reaction of lipids; oils, fats, and waxes. Occurrence and properties of fatty acids, esters of fatty acids, cholesterol, phospholipids, glycolipids, sphingolipids, cerebrosides and gangliosides. Role in cell membrane. **Enzymology**: Classification, enzyme activity, Michaelis-Menten kinetics, LB plot, inhibition - competitive, uncompetitive, non-competitive, determination of Ki, active site, allosterism - ATCase, isoenzymes- LDH, catalytic strategies, co-enzymes and cofactors, multienzyme complexes-PDC.	12h
4	**Basics of Nucleic Acids**: DNA as genetic material ,Griffith ,Avery & Macleod experiments , isolation of DNA & RNA from biological sources, secondary structure of DNA, Watson and Crick model, Chargaff's rule; B and Z DNA. Features of mitochondrial, chloroplast DNA and plasmids. Secondary structure of tRNA and clover leaf model. Physiochemical properties of nucleic acids, melting of DNA, T_m; factors affecting T_m, C_0t curve, classification of DNA based on C_0t curve.	12h

Learning Outcomes: After studying this paper the students will know –

a. Knowledge of Chemistry of biomolecules.
b. The fundamental principles in sequencing of DNA.
c. Importance of biomolecules in the biological system.
d. Structure and function of enzymes.

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	2	2	3	3	3	3	3
CO2	2	2	2	1	2	2	2	3	3	3	3	3
CO3	2	2	1	2	2	2	2	3	3	3	3	3
CO4	2	1	2	2	2	2	2	3	3	3	3	3
Weighted average	2	1.75	1.75	1.75	2	2	2	3	3	3	3	3
PO Attainment	1.56	1.37	1.37	1.37	1.56	1.56	1.56	2.34	2.34	2.34	2.34	2.34

References:

1. Bahl, A. 2010. Advanced organic chemistry. S Chand & Company Limited.
2. Berg, J. M., Tymoczko, J. L., and Stryer, L. 2006. Biochemistry: International edition. W H Freeman & Company Ltd.
3. Berg, J. M., Tymoczko, J. L, and Stryer, L. 2002. Biochemistry (5th Ed.). W H Freeman.
4. Mathews, P. 2002. Advanced chemistry. Cambridge low price editions. Cambridge University Press, UK.
5. Morrison, R., and Boyd, R. 1992. Organic Chemistry (6th Ed.). Englewood Cliffs, NJ: Prentice Hall.
6. Nelson, D. L., Lehninger, A. L., and Cox, M. M. 2008. Lehninger principles of biochemistry. New York :
7. Voet, D., and Voet, J. G. 2010. Biochemistry, (4th Ed.) New York: J. Wiley & Sons.

Course Articulation Matrix

M.Sc. Biochemistry I Semester	Techniques in Biology Course Code: 23F102	FCHC – Foundation Course Hard Core
Total Hours: 48	Credits: 04 (LTP - 3:1:0)	Total Marks: 15+15+70 = 100

Module	Course contents	
1	**Biological samples: Types and preparation Study Models:** *In vivo* and *in vitro* models; Microbial, Animal, Plants; choice of models; types of studies, Auxotrophs. Routes of exposure of test chemicals in animals. Culture: microbes, animal and plant cells in laboratory. **Cell fractionation techniques:** Tissue homogenization, Cell lysis techniques, extraction of cellular contents. Protein purification techniques: salting in, salting out, dialysis and ultrafiltration. **Centrifugation:** Svedberg's constant, sedimentation velocity and sedimentation equilibrium. Ultra centrifugation: Differential and density gradient centrifugation, centrifugal elutriation, isolation of cell organelles (e.g. Mitochondria) from biological tissue samples.	12h
2	**Spectroscopic analysis** Principles and applications of colorimeter, spectrophotometer, fluorimeter, multiwall plate reader. Beer-Lambert's Law and its limitations. Extinction coefficient, chromogenic and fluorescent probes, their applications. Principle of flame photometry, and X-ray crystallography, IR, ESR, NMR & Raman's spectroscopy.	12h
3	**Chromatographic and electrophoretic techniques** **Chromatography:** Principles, working and applications of paper chromatography (radial, ascending, descending and 2-D), Thin layer chromatography, Brief introduction, application of Adsorption, Ion exchange, Gel filtration, Affinity, Gas chromatography. Chromato focusing, HPLC, UPLC and FPLC. **Protein electrophoresis:** Polyacrylamide gel electrophoresis, SDS-PAGE, IEF & 2DEF.Visualizing proteins using CBB, silver stain;glycoproteinsand lipoproteins staining,Brief introduction to Zymogram and reverse zymogram; **Nucleic acid electrophoresis:** Agarose gel electrophoresis, Visualizing nucleic acids in using Ethidium bromide and UV. Fluorescence probes: SYBR green and Eeva green, Taq man, PFGE and capillary electrophoresis.	12h
4	**Radiochemistry and Mass spectroscopy** **Isotopes:** Heavy isotopes and radio isotopes, half-life, decay constant, detection and quantitation; Principle and working of GM counter and scintillation counter (solid/liquid). **Mass spectroscopy** Principle and construction of mass spectrometer. m/e, tof, MALDI and ESI. LC-MS, LC-MS-MS. **Applications of radioactivity:** Radio isotopes in biology 3H, 14C, 32P, 131I, 35S; Labeling of proteins and nucleic acids, autoradiography, pulse chase method, carbon dating.	12h

Learning Outcomes: After studying this paper the students will know –

a. Techniques in Biology. T
b. he fundamental principles in cell homogenization.
c. Importance of bio analytical techniques.
d. Significance of radiochemistry and mass spectroscopy.

References: Slater, A.., Scott, N., and Fowler, M. 2003. Plant Biotechnology: The Genetic Manipulation of Plants. OxfordUniversity Press,

Oxford, New York,////Wilson, K., and Walker, J. 2010. Principles and techniques of biochemistry and molecular biology. CambridgeUniversity Press.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	2	2	3	3	3	3	3
CO2	2	2	2	1	2	2	2	3	3	3	3	3
CO3	2	2	1	2	2	2	2	3	3	3	3	3
CO4	2	1	2	2	2	2	2	3	3	3	3	3
Weighted average	2	1.75	1.75	1.75	2	2	2	3	3	3	3	3
PO Attainment	1.99	1.74	1.74	1.74	1.99	1.99	1.99	2.98	2.98	2.98	2.98	2.98

M.Sc. Biochemistry I Semester	Molecular Cell Biology Course Code: 23F103	FCHC – Foundation Course Hard Core
Total Hours: 48	Credits: 04 (LTP - 3:1:0)	Total Marks: 15+15+70 = 100

Module	Course contents	
1	**Organization of the cell** Universal features of cells, Ultra-structure of prokaryotic and eukaryotic cells (Plants and animals), Structure of plant cell wall, Structure of cell membrane and models, functions of cell membrane, Intracellular organelles: Structure and functions of Ribosomes, Golgi apparatus; Mitochondria, Chloroplast, Lysosomes, Centrosome, Endoplasmic reticulum, Nucleus-Internal organization, Chromatin- structure and function, cellular cytoskeleton.	12h
2	**Cellular processes** Cell cycle and its regulation, Cell cycle check points, Molecular dynamics of cell division, interphase, Mitosis and meiosis, Cyclins and CDKs, Cell differentiation: Stem cells, Differentiation of stem cells into different cell types and organization into specialized tissues, apoptosis, necrosis & autophagy Molecular mechanisms of membrane transport active, passive and facilitated, Receptor mediated endocytosis.	12h
3	**Cancer Biology** Introduction,Historical account, classification, Characteristics of cancer cells, hallmark features of cancer cells, Carcinogenesis, Exogenous and endogenous carcinogens, cancer initiation, promotion and progression, Cancer cell cycle, Viruses and cancer, Oncogenes, Tumor suppressor genes with examples, cancer therapy presentand future, Role of p53 in cancer. Role of phytochemicals in cancer treatment, cancer stem cells.	12h
4	**Basics of Signal Transduction** Extra-cellular matrix components, Cell junctions, Cell adhesion molecules, Hormonesand their receptors, Cell surface receptors as reception of extra-cellular signals, Typesof cell signalling, Growth factors- EGFR, VEGF, PDGF and theirSignalling, signalling through G-protein coupled receptors; Second messengers in signal transduction pathways: cAMP and calcium ions (Ca2+), signalling through Receptor tyrosine kinases ,MAP kinase pathway,P13K -Akt pathway.	12h

Learning Outcomes: After studying this paper the students will know –

a. Structural and functional components of a cell.
b. Role of cell cycle and its regulation.
c. Phytochemicals in cancer treatment and stems cells.
d. Receptors of signaling pathways.

References:

1. Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., and Walter, P. 2008. Molecular Biology of the Cell. (5thEd.) New York: Garland Science.
2. Cooper, G. M., and Hausman, R. E. 2013. The Cell: a Molecular Approach (6th Ed.). Washington: ASM,Sunderland.
3. Lodish H., and Berk A. 2016. Molecular Cell Biology (8th Ed.). New York. W H Freeman.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	1.57	1.37	1.37	1.37	1.57	1.57	1.57	2.35	2.35	2.35	2.35	2.35

M.Sc. Biochemistry II Semester	Bioorganic and Bioinorganic Chemistry Course Code: 23F104	HC – Hard Core
Total Hours: 48	**Credits: 03 (LTP - 3:1:0)**	**Total Marks: 15+15+70 = 100**

Module	Course contents	
1	**Bonding:** Covalent bond; coordinate bond; coordinate bond formation in transition metals. Bonding of iron in hemologibin and cytochromes, cobalt in Vit B12, magnesium in chlorophyll.Special properties of water; Structure and bonding. Crystal field theory; Ligand field theory and Valence bond theory. Chelators; types of ligands and complexes.	**12h**
2	**Electrolytes, Non-Electrolytes and Electrodes** Osmotic pressure, vapor pressure, osmometer, Donnan membrane equilibrium. Hydrogen electrode, electrode potential, and redox potential.	**12h**
3	**Stereochemistry:** Importance of stereochemistry, position and order of groups around carbon. Geometric and optical isomerism; absolute and relative configuration.Symmetry view of chirality, relation between chirality and optical activity, representation of chiral structures by Fischer. Structure and stereochemistry of sugars and amino acids; anomer, epimer, diastereomer, sterioisomer, D and L, (+) and (-), R and S.	**12h**
4	**Mechanism of organic reactions and Heterocyclic compounds:** Intermediates and rearrangements in organic reaction. Reactionenergetic.Classification of rearrangement reactions.Reaction rates, order and molecularity of reaction.Mechanisms and stereochemistry of substitution (electrophilic and nucleophilic - sN1 and sN2 reactions) addition, elimination and rearrangement reactions.Mechanisms of ester hydrolysis.Property of aromaticity and resonance. Heterocyclic Compounds: Chemistry of furan, indole, thiazole, pterine, pteridine, isoalloxazine, pyrrole. Chemistry of porphyrins and heme and their biological importance.	**12h**

Learning Outcomes: After studying this paper the students will know –

a. The basics in chemical reactions.
b. Chemical bonding.
c. Stereochemistry of biomolecules.
d. Different types of heterocyclic compounds and their biological role.

References:

a. Bahl A. (2010) Advanced organic chemistry (22nd Edition). S Chand & Company Limited.
b. Mathews P. (2002) Advanced chemistry (5th Edition). Cambridge low price editions. Cambridge University Press UK.
c. Morrison R. and Boyd R. (1992). Organic Chemistry (6th edition). Englewood Cliffs, NJ: Prentice Hall.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	1.74	1.99	1.99	1.99	1.99	1.99	1.99	2.98	2.98	2.98	2.98	2.98

M.Sc. Biochemistry I Semester	Practical 1A (Experiments in Biological Techniques, Bioorganic chemistry & Tour Report) Course Code: 23F105	HC – Hard Core
Total Hours: 64	Credits: 02 (LTP - 0:0:4)	Total Marks: 15+15+70 = 100

1. Determination of pKa of amino acids.
2. Estimation of λmax and molar extinction coefficient (Beer Lambert's Law).
3. Isolation of starch from potatoes and estimation of purity.
4. Isolation of glycogen from chicken liver and estimation of purity.
5. Estimation of reducing sugar by DNS method.
6. Centrifugation.
7. Purification of casein from cow's milk.
8. Estimation of proteins by Lowry's method.
9. Estimation of proteins by Biuret Method.
10. Estimation of saponification of lipids.
11. Estimation of iodine value of lipids.
12. Wavelength scans of proteins and nucleic acids using a spectrophotometer.
13. Circular paper chromatography for separation of amino acids.
14. Ascending paper chromatography for separation of amino acids.
15. Descending paper chromatography for separation of amino acids.
16. 2D paper chromatography for amino acids.
17. Thin layer chromatography of amino acids (1D and2D).
18. Column chromatography for the separation of plant pigments.
19. Gel filtration (Size exclusion chromatography).
20. **Photometry**
21. Estimation of Phosphate ions using Fiske-Subbarow method.
22. Estimation of calcium.
23. Estimation of Iron using Wong's method.
24. Synthesis and purification of aspirin.
25. Estimation of polyphenols from plant samples.
26. Estimation of anthocyanins from plant samples.

Laboratory Visits:

27. Demonstration of native Poly Acrylamide Gel Electrophoresis (PAGE).
28. Demonstration of Sodium Dodecyl Sulphate-Poly Acrylamide Gel Electrophoresis (SDS-PAGE) and estimation of molecular weight of proteins.
29. Demonstration of High Performance Liquid Chromatography.
30. Demonstration of Liquid Chromatography Mass Spectroscopy (LC-MS).
31. Demonstration of X-Ray Diffraction crystallography (XRD).
32. Demonstration of Nuclear Magnetic Resonance (NMR).
33. Demonstration of Infra-Red Spectroscopy (IR).
34. Demonstration of Atomic Absorption Spectroscopy (AAS).

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.24	1.99	2.24	1.99	1.74	1.99	1.99	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry I Semester	Practical 1B (Experiments in Cell Biology, Genetics and Bioinorganic Chemistry &Seminar) Course Code: 23F106	HC – Hard Core
Total Hours: 64	Credits: 02 (LTP - 0:0:4)	Total Marks: 15+15+70 = 100

1. Distillation of water for biochemical assays.
2. Preparation buffers and solutions & Measurement of pH.
3. Microscopic examination of prokaryotic and eukaryotic cells using staining techniques.
4. Cell Counting using hemocytometer.
5. Micrometry.
6. Assessment of cell viability and cytotoxicity.
7. Preparation of liquid and solid media for growth of microorganisms
8. Isolation and maintenance of microorganisms (from soil and water) by plating, streaking and serial dilution methods, slants and stab cultures.
9. Culturing the anaerobic bacteria by candle jar method.
10. Gram staining
11. Ultra-violet killing curve and determination of mutant types in *Saccharomyces cerevisiae.*
12. Isolation of cell organelles.: Isolation of mitochondria from the animal sources and MTT reduction assay.
13. Estimation of mitochondrial enzymes: Succinate Dehydrogenase (ETC complex II)
14. Study of mitosis in onion root tips.
15. Study of meiosis in onion flower buds.
16. Study of special chromosomes- B chromosomes, and sex chromosomes.
17. Determination of chiasma frequency in onion.
18. Assessment of polytene chromosomes.
19. Study of chromosomes by air-dry technique
20. Study of Mutations in *Drosophila*
21. Study of Autosomal and sex-linked gene inheritance in *Drosophila*
22. To solve genetic problems on linkage, ordered and unordered tetrads

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.24	1.99	2.24	1.99	1.74	1.99	1.99	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry I Semester	Genetics Course Code: 23F107	FCSC – Foundation Course Soft Core
Total Hours: 48	Credits: 03 (LTP - 3:1:0)	Total Marks: 15+15+70 = 100

Module	Course contents	
1	**History and developments of genetics: Principle of Genetic Transmission:** Mendel's' Experiments, Symbols and terminology, Principle of dominance and segregation, Principle of independent assortment, Mendelian inheritance and probability (Multiplication and Addition rites). Extensions of Mendelian Principles:co-dominance, incomplete dominance, gene interactions, multiple alleles, lethal alleles, pleiotropy, penetrance and expressivity, polygenic inheritance, linkage and crossing over, sex linked inheritance, sex limited and influenced traits, genome imprinting, extra nuclear inheritance.	12h
2	**Viral Genetics:** Lytic and Lysogenic cycles, Phage Phenotypes, Phenotypic Mixing, Recombination and Mapping. **Bacterial Genetics:** Bacterial Transformation- Types of transformation mechanisms found in prokaryotes, Bacterial Conjugation- properties of the F plasmid, F^+ x F^- mating, F' x F^- conjugation, Hfr conjugation. **Fungal Genetics:** *Neurospora*- Tetrad analysis and linkage detection - 2 point and 3 point crosses, chromatid and chiasma interference, Mitotic recombination in *Neurospora*. **Algal Genetics:** *Chlamydomonas* - unordered tetrad analysis - Recombination and Mapping.Floral meristems and floral development in *Arabidopsis,* ABC model.	12h
3	**Mutation and mutagenesis:** Nature, type and effects of mutations. Mutagenesis – physical and chemical mutagens, base and nucleoside analog, alkylating agents, interrelating agents, ionizing radiation. Induction and detection of mutation in microorganisms and *Drosophila*. Site directed mutagenesis and its applications. **Recombination:** Homologous and non-homologous recombination, Holliday model, site-specific recombination. **DNA Repair**: Mechanism of genetic repair- direct repair, photoreactivation, excision repair, mismatch repair, post-replicative recombination repair, Repair of double- strand breaks, SOS repair.	12h
4	**Sex Determination**-Sex chromosomes, Chromosomal and genetic basis of sex determination. Sex determination in *C.elegans*,*Drosophila*, human and Plant(*Melandrium*). Dosage compensation-Genic balance, Gene dose, Molecular basis of dosage compensation in Drosophila and man. **Transposable elements**- discovery in maize and bacteria, transposal elements in bacteria and bacteriophage, types and functions; Transposable elements in eukaryotes-Plants, *Drosophila* and Humans, mechanisms of transpositions.	12h

Learning Outcomes: After studying this paper the students will know –

a. Model organisms available to study genetics.
b. Mutation and mutagenesis.
c. Types of DNA recombination and DNA repair.
d. Detailed account on transposable elements and transpositions.

References:

1. Buchanan, B.B., Gruissem, W., and Jones, R.L. 2010. Biochemistry and Molecular Biology of Plants. Ed. ASPP Press.USA.
2. Griffith, A. J. F., Gelbart, W.M., Muller, J. H., and Lewintin, R. C. 1999. Modern Genetic Analysis. W.H. Freeman and Co. New York.
3. Hartl, D. 1991. Basic Genetics (2nd Ed.). Jones and Barlett Publisher Inc. Boston.
4. Randhawa, S. S. 2017. Textbook of Genetics (Ist Ed.). S Vikas and Company, Jalandhar.
5. Tamarin, R. H. 2009. Principles of Genetics (7th Ed.) Tata-McGraw Hill, New Delhi.
6. Watson, J. D., Baker, T. A., Bell, S. P., Gann, A., Levine M., and Losick, R. 2004. Molecular Biology of the Gene (5th Ed.). Pearson Education Pt. Ltd., New Delhi, India.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3

M.Sc. Biochemistry I Semester	Membrane Biology Course Code: 23F108	SC – Soft Core
Total Hours: 48	**Credits: 03 (LTP - 3:1:0)**	**Total Marks: 15+15+70 = 100**

Learning Objectives: Students should study this paper to know –

a. To study biological membrane structure and function.

b. To study physiological process of biological membranes

Module	Course contents	
1	**Physico-chemical properties of membranes:** Compositionsand supra molecular organization. Membrane lipid phases; bilayer phase, non-bilayer phase, phase transition and membrane potential. Models of membrane: Evolution in concept of membrane models, Gorter and Grendel's experiment. Bilayer structure; Danielle - Davson model of membrane, Singer and Nicholson's model and Newer models. **Membrane asymmetry;** Membrane lipids, proteins and carbohydrates and their lateral diffusion. Biogenesis of lipids and proteins, polarized cells, membrane domains; caveolae, rafts and protein turnover. Intracellular targeting of proteins. Biogenesis of sub cellular organelles.	**12h**
2	**Methods of study of membrane structure:** Lipid transfer proteins, phospholipases, chemical methods, amino-phospholipid translocation, TNBS reagent, freeze fracture and freeze etching. Lipid vesicles; liposome preparations and application, function of sterols in membranes. FRET, FRAP, single particle tracking, EM of membranes, calorimetry, confocal microscopy of membrane dynamics. Cell fusion, shedding of membrane.	**12h**
3	**Membrane transport:** Laws of diffusion across membranes; simple diffusion, facilitated diffusion and active transport. Glucose transporters, Ca^{2+} ATPase, Na^{+}-K^{+}ATPase (Structure and mechanism of action). Endocytosis, receptor mediated endocytosis, exocytosis, ion channels; gated and non-gated, aquaporin channel.Bacterial phosphotransferase system.	**12h**
4	**Nerve transmission:** Structure and types of Neuron. Acetylcholine receptor and neurotransmitters, mechanisms of nerve conduction, resting and action potential,ion channels, ionophores, patch clamp technique. Presynaptic and postsynaptic membranes. Nicotinic and muscarinic neurons. GABA, NMDA, structure and function. **Muscle contraction:** Mechanisms, role of calcium, calmodulin, and phospholamban.	**12h**

Learning Outcomes:

a. Understand properties of biological membrane, and different models of membranesexplaining the biological function.

b. Understand membrane asymmetry and other properties using various methods.

c. Understand the complex mechanism involved in transportation of biomolecules acrossmembranes.

d. Nerve transmission.

References:

1. Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., and Walter, P. 2008. Molecular Biology of the Cell.(5th Ed.) New York: Garland Science.
2. Cooper, G. M., and Hausman, R. E. 2013. The Cell: a Molecular Approach (6th Ed.). Washington: ASM,Sunderland.
3. Lodish H., and Berk A. 2016. Molecular Cell Biology (8th Ed.). New York. W H Freeman.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.24	1.99	2.24	1.99	1.74	1.99	1.99	2.99	2.99	2.99	2.99	2.99

II Semester

M.Sc. Biochemistry II Semester	Molecular Biology Course Code: 23F201	FCHC – Foundation Course Hard Core
Total Hours: 48	**Credits: 04 (LTP - 3:1:0)**	**Total Marks: 15+15+70 = 100**

Learning Objectives: Students should study this paper to know –

a. To understand biological activities and metabolism at DNA and protein level

Module	Course contents	
1	**Genome organization:** Prokaryotic and eukaryotic genome organization, central dogma, structural organization of chromosome, structure and functions of DNA & RNA, Biochemical evidences for DNA as genetic material. **DNA**: Chemistry of DNA, Forces stabilizing DNA structure, Physical Properties of Ds DNA (UV absorption spectra Denaturation and renaturation), chemical that react with DNA, Interaction with small ions, DNA binding motifs: Zinc finger, leucine zipper, helix-turn- helix others motifs, DNA binding and kinks.	**08h**
2	**DNA topology:** Supercoiled form of DNA, Biology of supercoiled DNA, DNA topoisomerases, effect of supercoiling on structure of DNA and role of supercoiling in gene expression and DNA replication. **DNA Replication:** Characteristics and functions of bacterial DNA polymerases I, Mechanism of prokaryotic DNA replication, models of replications in prokaryotes. Fidelity of replication, Eukaryotic DNA polymerases and mechanism of replication. Replication of viral DNA, DNA replication in telomeric regions, Telomerases, mechanisms of action of topoisomerase I and II Models of DNA replication, Inhibitors of replication.	**12h**
3	**Transcription:** Characteristics and function of bacterial RNA polymerases Eukaryotic RNA polymerases, mechanism of transcription and regulation. transcription factors, Stringent response. Post transcriptional modifications of mRNA mechanism of splicing, Processing of tRNA and rRNA. Inhibitors of transcription. Mechanism of action of ribozymes, **Translation:** Structure and role of tRNA in protein synthesis, ribosome structure, basic feature of genetic code and its deciphering, translation (initiation, elongation and termination in detail in prokaryotes as well as eukaryotes), Post translational processing, Control of translation in eukaryotes (Antisense RNA, Heme and interferon).	**14h**
4	**Regulation of Gene expression in prokaryotes and eukaryotes:** Positive and negative regulation. lac-, ara-, his- and trp- operon regulation; antitermination,global regulatory responses; Regulation of gene expression in eukaryotes: Transcriptional, translational and processing level control mechanisms. **Protein localization & Gene Silencing**: Export of secretory proteins- signal hypothesis, transport and targeting of proteins to mitochondria, chloroplast, peroxisomes, Gene Silencing: Definition, types, RNAi pathway, shRNA & CRISPR-CAS.**Non coding RNA**: coding and non-coding RNA, types of ncRNA : Short ncRNA (mi RNA, Sn RNA, Pi RNA, t-RNA & it's fragments, SnoRNA) long ncRNA ,functional significance of ncRNA	**14h**

Learning Outcomes: After studying this paper the students will know –

The idea about the principles behind molecular biology.

Understand the molecular tools and its application in basic research

applied research in various fields of life sciences.

Regulation of gene expression

References:

1. Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, K. and Watson, J. D.1994. Molecular Biology of the Cell. Garland Science, New York.
2. Cooper, G.M. 1997.The Cell: A molecular approach, ASM Press, USA.
3. Elliott, W. H., and Elliott, D. C. 2006. Biochemistry and Molecular Biology (3rd Indian Ed.). Oxford University Press, Oxford.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.99	2.99	2.99	2.99	2.99	2.74	2.74	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry II Semester	Enzymology Course Code: 23F202	HC – Hard Core
Total Hours: 48	Credits: 03 (LTP - 3:1:0)	Total Marks: 15+15+70 = 100

Module	Course contents	
1	**General aspects:** Nature of enzymes, localization, isolation, purification and characterization of enzymes. Criteria of purity of enzymes, fold purity. Nomenclature and IUB classification of enzymes.Enzyme specificity, specific activity, assay methods; coupled enzyme assays, continuous, end point and kinetic assay.Units of enzyme activity, IU and Katal.	12h
2	**Enzyme kinetics:** Michaelis-Menten equation for uni substrate reactions, initial velocity approach, steady state approach. Vmax, Km and their significance.Linear transformation of Michaelis-Menten equation; Lineweaver-Burk plot, Eadie-Hofstee, Wolf and Cornish-Bowden.Scatchard plot. Rate of a reaction, order and molecularity. I order reaction kinetics. Rectangular hyperbola, Michaelis-Menten equation as rectangular hyperbola, linear transformation, calculation of slope, intercept. Reversible and irreversible inhibition; competitive, non competitive, uncompetitive product inhibition and suicide inhibition. Determination of Ki and Kd. Bisubstrate reaction: Cleland's notation with examples of ordered, ping-pong, and random reactions. General rate equation.	12h
3	**Cooperativity; Isozymes and Multifunctional enzymes** Binding of ligands to macromolecules; Scatchard plot, positive and negative cooperativity. Oxygen binding to hemoglobin.Hill equation, homotropic and heterotropic effectors, aspartyl trans carbamylase as an allosteric enzyme. Metabolic regulation of enzyme activity: Feedback regulation, fine control of enzyme activity. Isoenzymes; LDH, multifunctional enzymes (DNA polymerase) and multi enzyme complex (PDC).	12h
4	**Mechanisms of enzyme catalysis:** Active site structure; methods of determining active site structure. Isolation of ES complex, affinity labeling, chemical modification studies, site directed mutagenesis. Nature of enzyme catalysis: Transition state theory, proximity and orientation, orbital steering, acid base catalysis, covalent catalysis, metal ion catalysis, nucleophilic and electrophilic catalysis, intramolecular catalysis, entropy effects. Effect of temperature and pH on enzyme catalysed reaction. Fast reactions - Stopped flow, temperature jump method with examples of enzymes. Mechanisms of action of specific enzyme: Chymotrypsin; zymogen activation, acid-base catalysis, charge relay network. Lysozyme, alcohol dehydrogenase, ribonuclease, carboxypeptidase A, RNA as an enzyme, abzymes, coenzymic action ofNAD+, FAD, TPP, PLP, Biotin, CoA, folic acid and lipoic acid.	12h

Learning Outcomes: After studying this paper the students will know –

a. Chemistry of enzyme catalysis. b. Enzyme kinetics. c. Regulation of enzyme activity d. Enzyme inhibition

References:

a. Berg J.M., Tymoczko J.L. and Stryer L. (2006). Biochemistry: international edition: WH Freeman & CompanyLimited.
b. Boyer R.F. (2006). Biochemistry Laboratory: Modern Theory and Techniques.
c. Creighton T.E. and Chasman D.I. (1997). Protein structure: a practical approach: IRL press Oxford.
d. Palmer T, Bonner P.L. (2007). Enzymes: biochemistry, biotechnology, clinical chemistry: Elsevier.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.99	2.99	2.99	2.99	2.99	2.74	2.74	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry II Semester	Practical 2A (Experiments in Molecular Biology and Energy Metabolism; Laboratory visits and Tour report) Course Code: 23F203	HC – Hard Core
Total Hours: 64	Credits: 02(LTP - 0:0:4)	Total Marks: 15+15+70 = 100

Course objectives:

- To gain proficiency in laboratory techniques in molecular biology and energy metabolism.
- To learn the experiments to articulate the metabolic pathways.
- To test the markers for health and disease.
- To obtain real time knowledge from the industries and institutes of national andinternational repute.

Course Outcomes:

- Proficiency in laboratory techniques in molecular biology and energy metabolism.
- Proficiency in the experiments to articulate the metabolic pathways.
- Efficacy in testing the markers for health and disease.
- Proficiency in real time functioning of the industries and institutes of national andinternational repute.

1. Isolation of Genomic DNA from yeast cells and determination of purity.
2. Estimation of DNA by diphenyl amine method.
3. Isolation of RNA from yeast or plant cells.
4. Estimation of RNA by orcinol method.
5. Restriction digestion of DNA and agarose gel electrophoresis.
6. Determination of RNAse activity
7. Restriction digestion of plasmid and analysis
8. Polymerase Chain Reaction.
9. Estimation of Blood glucose: fasting, post prandial, random
10. Isolation of phospholipids and neutral lipids from hen yolk.
11. Estimation of phospholipids and neutral lipids using thin layer chromatography.
12. Estimation of neutral lipids (cholesterol) using Zak's method.
13. Estimation of triglycerides.
14. Estimation of HDL, LDL.
15. Assessment of membrane stability of RBCs.
16. Estimation of a keto acid.
17. Activity of lipases.
18. Estimation of acid value of lipids.
19. Estimation of peroxide value of lipids.
20. Study tour to Molecular Biology based industries and institutes.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	2	3	2	3	3	3	3	3	3
Weighted average	3	2.75	3	2.75	3	2.75	3	3	3	3	3	3
PO Attainment	2.99	2.74	2.99	2.74	2.99	2.74	2.99	2.99	2.99	2.99	2.99	2.99

M.Sc. BiochemistryII Semester	Practical 2B (Experiments in Enzymology and Research Paper Presentation) Course Code: 23F204	HC – Hard Core
Total Hours: 64	**Credits: 02(LTP - 0:0:4)**	**Total Marks: 15+15+70 = 100**

Course objectives:

- To gain proficiency in enzymology techniques.
- To study a recent research article in the field of Biochemistry and related streams, and present as a platform presentation.

Course Outcomes:

1. Proficiency in in enzymology techniques.
2. Proficiency in understanding a research article in the field of Biochemistry and related streams,
3. Efficiency in presenting a platform presentation.
4. Efficacy in isolating and purifying an enzyme and assess the parameters.

1. Estimation of activity of Salivary amylase.
2. Estimation of Specific activity of Salivary amylase.
3. Estimation of optimum pH for the activity of Salivary amylase.
4. Estimation of optimum buffer conjugates for activity of Salivary amylase.
5. Estimation of optimum buffer concentration for activity of Salivary amylase.
6. Estimation of temperature optimum for Salivary amylase.
7. Time kinetics of Salivary amylase.
8. Estimation of energy of activation of Salivary amylase.
9. Effect of enzyme concentration on activity of Salivary amylase.
10. Estimation of Km and Vmax of Salivary amylase.
11. Plotting Lineweaver-Burk plot for Salivary amylase.
12. Assessment of effects of selected metal ions and drugs on the activity of Salivary amylase.
13. Purification of Alkaline phosphatase from bovine milk by differential centrifugation.
14. Estimation of activity of Alkaline phosphatase.
15. Estimation of Specific activity of Alkaline phosphatase and fold purity.
16. Calculation of fold purity of Alkaline phosphatase.
17. Purification of Invertase from plant latex.
18. Estimation of activity of Invertase.
19. Estimation of Specific activity of Invertase.
20. Calculation of fold purity of Invertase.
21. Purification of Esterase from peas by using ammonium sulphate precipitation.
22. Estimation of activity of Esterase.
23. Estimation of Specific activity of Esterase and fold purity.
24. Calculation of fold purity of Esterase.
25. Purification of Proteases from plant latex.
26. Estimation of activity of Protease.
27. Estimation of Specific activity of Protease.
28. Calculation of fold purity of Protease.
29. Estimation of catalase activity and specific activity.

30. Assessment of clinically relevant enzymes: SGOT, SGPT, Creatine Kinase, Lactate Dehydrogenase.
31. Research paper presentation.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	2	3	2	3	3	3	3	3	3
Weighted average	3	2.75	3	2.75	3	2.75	3	3	3	3	3	3
PO Attainment	2.99	2.74	2.99	2.74	2.99	2.74	2.99	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry II Semester	Metabolism of Lipids Course Code: 23F205	SC – Soft Core
Total Hours: 48	**Credits: 03(LTP - 3:0:0)**	**Total Marks: 15+15+70 = 100**

Module	Course contents	
1	**Phospholipids, TG and Fatty acid degradation:** Degradation of triacylglycerols, phospholipids and sphingolipids and regulations; lipase, hormone sensitive lipase, phospholipases and sphingomyelinase. β-oxidation Knoop's experiment, saturated and unsaturated fatty acids.Regulatory aspects. Oxidation:α , β and ᵞ oxidation. Energetics and biosynthesis of fatty acids; fatty acid synthetase complex, chain elongation and desaturation.Pathways in plants and animals, conversion of linoleate to arachiodnante.Regulatory aspects.	**12h**
2	**Cholesterol synthesis, degradation, and regulations:** Metabolism of circulating lipids; chylomicrons, HDL, LDL and VLDL. Reverse cholesterol transport by HDL. Oxidized lipids and their metabolism, Mechanism of foam cell formation. Obesity, and mechanisms, exercise and regulation of energy metabolism.	**12h**
3	**Phospholipid biosynthesis and regulations:** Denovo pathway and inter conversion, biosynthesis of phospholipids, sphingolipids, ether lipids and glycolipids. Degradation and biosynthesis of gangliosides and cerebrosides. Biosynthesis of prostaglandins, thromboxanes, leukotrienes, and lipoxins. Role of Hormones in the regulation of lipid metabolism: HPA axis. Adrenal gland and pancreatic hormones.	**12h**
4	**Lipid mediators:** Eicosanoids, prostaglandins, leukotrienes, prostacyclins, thrombaxanes, DAG, ceramide and PAF. Role of anti-inflammatory drugs and eicosanoids. Integration of metabolic pathways: Integration of carbohydrate and lipid metabolism, and their regulation and manipulation.	**12h**

Learning Outcomes: After studying this paper the students will know –

a. Chemistry of lipid metabolism.
b. Importance of lipid metabolism.
c. Role of hormones in the regulation of lipid metabolism.
d. Lipid mediators and inflammation.

References:

a. Berg J.M., Tymoczko J.L. and Stryer L. (2006). Biochemistry: international edition: WH Freeman & Company Limited.
b. Devlin T.M. (2020). Textbook of biochemistry: with clinical correlations (8th Edition). New York: J. Wiley & Sons.
c. Nelson D.L., Lehninger A.L. and Cox M.M. (2008). Principles of biochemistry: Macmillan.
d. D. and Voet J.G. (2010). Biochemistry (4th Edition). New York: J. Wiley & Sons.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.99	2.99	2.99	2.99	2.99	2.74	2.74	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry II Semester	Metabolism Of Carbohydrates Course Code: 23F206	SC – SOFT Core
Total Hours: 48	Credits: 04 (LTP - 3:0:0)	Total Marks: 15+15+70 = 100

Module	Course contents	
1	**Introduction:** Catabolism, anabolism, and amphibolic pathways. **Energy Utilization:** I, II and III laws of thermodynamics. Enthalpy, entropy, free energy and chemical equilibrium. High energy compounds: Energy currency, ATP, ADP, creatine phosphate, phosphoenol pyruvate as energy rich compound.	**12h**
2	**Catabolism and Anabolism of Carbohydrates** Cellular ingestion of glucose, glycolysis, energetics regulation. Pathways of utilization of pyruvate-lactate, ethanol, gluconeogenesis, regulation, Cori cycle, glucose paradox, citric acid cycle and its regulation, energetics, anaplerosis, glyoxylate cycle. HMP shunt pathway, inter conversion of hexoses. Utilization of non-glucose sugars. Biosynthesis of sucrose, lactose, starch and glycogen.	**12h**
3	**Mitochondrial electron transport**: Entry of reducing equivalents for oxidation; malate-aspartate shuttle, glycerol phosphate shuttle. Organization of respiratory chain complexes, structure and function of the components; Fe-S proteins, cytochromes, Q cycle, proton transfer, P/O ratio, respiratory control, oxidative phosphorylation, uncouplers and inhibitors, sequence of electron carriers based on red-ox potentials. ATP synthesis, ATP synthase complex, binding change mechanism, proton motive force, Mitchell's hypothesis. Substrate level phosphorylation, futile cycles and their application.	**12h**
4	**Hormonal regulation of glucose metabolism:** Effect of hormones on carbohydrate metabolism; insulin, glucagon, catecholamines, growth hormones, corticosteroids and thyroid hormones in different tissues. Secretion of Insulin and glucagon in response to various stimuli (Fasting, food, intestinal hormones etc.,) Role of Hormones in the regulation of carbohydrate metabolism: HPA axis. Adrenal gland and pancreatic hormones Disorders of carbohydrate metabolism: diabetes mellitus, classification and clinical diagnosis.	**12h**

Learning Outcomes: After studying this paper the students will know –

a. Chemistry of carbohydrate metabolism.
b. The fundamental thermodynamic principles in metabolism.
c. Importance of carbohydrate metabolism.
d. Role of hormones in the regulation of carbohydrate metabolism.

References:

a. Berg J.M., Tymoczko J.L. and Stryer L. (2002) Biochemistry (5th Edition). International edition: WH Freeman & Company Limited
b. Devlin T.M. (2020). Textbook of biochemistry: with clinical correlations (8th Edition). J. Wiley & Sons.
c. Nelson D.L., Lehninger A.L. and Cox M.M. (2008) Principles of Biochemistry (12th Edition). Macmillan.
d. Voet D. and Voet J.G. (2010) Text book of Biochemistry (4thEdition). New York: J. Wiley & Sons.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.99	2.99	2.99	2.99	2.99	2.74	2.74	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry II Semester	Endocrinology Course Code: 23F207	SC – Soft Core
Total Hours: 48	**Credits: 03(LTP - 3:0:0)**	**Total Marks: 15+15+70 = 100**

Module	Course contents	
1	**Cell:** Structure of a cell, mitosis**,** meiosis**,** cell cycle and its regulation, different phases of cell cycle. Apoptosis, cyclins and CDKs. Cell-cell and cell-ECM interaction and ECM structure and function. **Endocrine System**: Endocrine organs in man. Location and inter relationship of endocrine glands in man; classification and chemistry of hormones, hormones of hypothalamus, pituitary, thyroid, parathyroid, pancreas, liver, adrenals, gonads and intestine.	**08h**
2	**Functions and abnormalities:** Hypo and hyper production of hormones secreted by;pituitary, thyroid, pancreas, adrenals and gonads. **Structure and control of hypothalamus function:** Hormones produced; GRH, somatostatin, TRH, CRH, GnRH. **Pituitary gland:** Structure, hormones of anterior, posterior and median lobes. Pro-opiomelanocortin. **Testes and ovaries:** Structure, hormones produced by testes and ovaries, menstrual cycle. Regulation of hormone production and release: hypothalamus-pituitary-target organ axis and regulation by feedback mechanism.	**14h**
3	**Mechanism of hormone action: Peptide hormones:** General mechanisms of cell signaling by hydrophilic factors, transmembrane receptors, transmembrane receptors, G protein coupled receptors, receptor tyrosine kinase, eicosanoid receptors. **Second messengers:** 1P3, DAG, cAMP, protein kinases. Nitric oxide signaling; generation and action. **Growth factors:** Structure, mechanism of action and receptors of EGF, PDGF, NGF and IGF. insulin receptor.	**12h**
4	**Mechanism of action of steroid hormones:** Conversion of cholesterol to steroid hormone.Steroid receptors, isolation and characterization of steroid receptors. Receptor down regulation, desensitization and up regulation. Pineal gland, melotonin and circadian rhythm. Chemistry and action of prostaglandins, prostacyclins and thromoxanes. Newly discovered hormones **Insect hormones:** Structure and function of moulting hormone, ecdysone, juvenile hormones, Pheromones. Application of insect hormones.	**14h**

Learning Outcomes: After studying this paper the students will know –

a. Understand the detailed structure of a cell
b. Involvement of various organelles in the synthesisof protein, amino acid and steroid hormones.
c. Understand the various endocrine organs in relation to the regulation of various metabolic processes.
d. Understand the hypo and hyperactivities of all the endocrine organs and their manifestation in various disorders.

References:

a. Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., and Walter, P. 2008. Molecular Biology of the Cell. (5th Ed.) New York: Garland Science.
b. Cooper, G. M., and Hausman, R. E. 2013. The Cell: a Molecular Approach (6th Ed.). Washington: ASM, Sunderland.
c. Lodish H., and Berk A. 2016. Molecular Cell Biology (8th Ed.). New York. W H Freeman.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.99	2.99	2.99	2.99	2.99	2.74	2.74	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry II Semester	Biology for non-biologists Course Code: 23F208	Open Elective
Total Hours: 48	Credits: 04 (LTP - 2:2:0)	Total Marks: 15+15+70 = 100

Module	Course contents	
1	Introduction**:** History of Biology; Origin of Life-theories, The Scientific Study of Life; The Chemical Basis of Life ; The Molecules of Cells A Tour of the Cell ; The Working Cell Classification of Phyla, (microbes, plants and animals.) Photosynthesis: Using Light to Make Food; How Cells Harvest Chemical Energy	**12h**
2	The Cellular Basis of Reproduction and Inheritance Patterns of Inheritance	**6h**
3	Human Physiology: Basic structure and functioning, disorders of Nervous, renal, hepatic, muscle, blood, bone tissues. Reproduction, Hormones. Animal cell culture for research and therapy. Plant physiology: Meristems, primary and secondary growth, types of tissues, reproduction, flowers, fruits, seeds, germination. Plant hormones, Plant tissue culture for crop improvement.	**18 h**
4	Molecular Biology of the Gene. Importance of gene expression. DNA Technology and Genomics and Proteomics Human diseases: Communicable, non-communicable. Familial and Sporadic disorders.	**12**

Learning outcomes

1. Student would be able to work independently to use scientific methods during biology related investigations.
2. Use critical thinking and scientific problem-solving to make informed decisions in a real-worldcontext.
3. Understand cellular processes in a living being.
4. Human diseases.

References:

1) Renato A Dela Pena Jr. General Biology. 2016. JFS Publishing
2) Holley D. General Biology I: Molecules, Cells and Genes. 2017. Dog Ear Publishing
3) Dela Pena Jr et al., General Biology. JFS Publishing Services 2016

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3

M.Sc. Biochemistry II Semester	Nutrition in Health and Disease Course Code: 23F209	Open Elective
Total Hours: 48	**Credits: 04 (LTP - 2:2:0)**	**Total Marks: 15+15+70 = 100**

Module	Course contents	
1	*Food Physiology*: Concept of balanced diet and energy content of foods; Basal and resting metabolism- influencing factors, Absorption of carbohydrates, lipids, proteins, nucleic acids, minerals and vitamins. *Common metabolic disorders*: Diabetes mellitus, disorders of HDL-cholesterol, LDL cholesterol, triglycerides, phenylketonuria, albinism. *Antioxidants*: Free radicals: definition, formation in biological Systems. Natural anti-oxidants, defense against free radicals. Role of free radicals and antioxidants in health and disease. Nutrition and lifestyle choices impact the life cycle before and during pregnancy, during lactation and infancy, during childhood and adolescence, and through adulthood and aging. The function of the RDA, DRI, and Tolerable Upper Intake Level.	**14h**
2	*Vitamins*: Dietary sources, biochemical functions and specific deficiency diseases associated with fat and water soluble vitamins; Hypervitaminosis symptoms of fat-soluble vitamins. *Minerals*: Dietary sources and deficiency disorders of dietary calcium, phosphorus, magnesium, iron, iodine, zinc and copper. *Malnutrition and blood disorders*: Etiology, clinical features, metabolic disorders and management of Marasmus and Kwashiorkor, Nutritional anemia - vitamin B_{12}, folate and iron deficiency anemia; hemoglobinopathies and thalassemias.	**12h**
3	Selection of foods, preliminary preparation of food, principles of cooking, methods of cooking - Boiling, Steaming, Pressure cooking, Microwave oven, Frying (shallow, deep fat), Smoking point of oil, Combination method, methods of cooking: advantages and disadvantages. Effect of cooking on nutritive value, methods of enhancing nutritive value	**8h**
4	*Obesity*: Definition, classification and biochemical basis; Genetic and environmental factors leading to obesity; Obesity related diseases and management of obesity. *Cardiovascular disease:* Diseases of Liver, Gall bladder & Pancreas-Hepatitis, (A, B, and C), alcoholic liver disease, Gall stones, pancreatitis, Prevention and dietary management. Clinical significance of aspartate aminotransferase, alanine aminotransferase, lactate dehydrogenase, amylase, lipase and trypsin.Diagnosis of jaundice and clinical importance of bilirubin.	**14h**
5	Questionnaire based Survey by students. Setting up Diagnostic test camps. Arranging for nutrition counseling. Seminars by students.	

Upon completion of this course, student will be able to:

1. Describe how to properly design individualized eating plans by utilizing diet planning principles,
2. The Food Guide Pyramid, Exchange System
3. other food guide plans that incorporate personal foodpreferences.
4. Students will learn about food and its relationship to health, development, and disease/ disorders.

References:

1) Bansal. Nutrition in disease. 2012. Pustak Mahal
2) Chakraborthy and Chakraborthy. Textbook of Nutrition in Health and Disease. 2019. Springer
3) Nisha. Diet Planning for Diseases. 2006. Kalpaz Publications.
4) Esperanza J. Carcache de Blanco, Jay Mirtallo , " Nutrition: An Approach to Good Health andDisease Management ", Bentham Science Publishers (2016). https://doi.org/10.2174/97816810810831160101
5) Esperanza J. Carcache de Blanco and Jay Mirtallo. Influence of Socio-economic Status andCulture in Diet and Nutrition. 2020. Bentham.
6) Teresa Aldamiz- Echevarria Lois Maria, Recarte Garcia-Andrade Carlos and Millan Nunez-Cortes Jesus, Cardiovascular Risk Factors and Dietary Patterns, Current Nutrition & Food Science 2011;7(2) . https://dx.doi.org/10.2174/157340111795713852
7) Berglund, Nutrition and Heart Disease: Causation and Prevention: 1st edition, edited by Ronald R Watson and Victor R Preedy, 2004, 354 pages, CRC Press, Boca Raton, FL, The American Journal of Clinical Nutrition, Volume 80, Issue 6, 2004
8) Martínez-González MA, Kim H, Prakash V, et al
9) Personalised, population and planetary nutrition for precision health
10) BMJ Nutrition, Prevention & Health 2021;4:doi: 10.1136/bmjnph-2021-000235
11) Lundstorm. Nutrition and Disease. Prevention and Therapy. Cambridge Scholars Publishing.2020.
12) Coulston et al., Nutrition in the Prevention and Treatment of Disease. 2017. Academic Press.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3

III Semester

M.Sc. Biochemistry III Semester	Immunology Course Code: 23F301	FCHC – Foundation Course Hard Core
Total Hours: 48	Credits: 04(LTP - 3:1:0)	Total Marks: 15+15+70 = 100

Module	Course contents	
1	**Over view and Types of immunity:** **Innate immunity:** anatomic barriers, physiologic barriers, phagocytic barriers, microbial antagonism, acute phase reactants, anti-microbial peptides, interferons, inflammation, Pattern Recognition Receptors (PRRs), Pathogen Associated Molecular Patterns (PAMPs) and Damage Associated Molecular Patterns (PAMPs). Complement system: components, pathways of activation and biological consequences. **Acquired immunity:** Active (Naturally acquired and artificially acquired), Passive (Naturally acquired and artificially acquired), Adoptive immunity, Humoral and Cell mediated immune response **Tissues of immune system:** Structural organization and functions of Lymphatic system, Primary lymphoid organs (Bone marrow, Thymus) Secondary lymphoid organs and tissues (Spleen, Lymph node, Tonsils, Adenoids, Peyer's patches, Lamina propria, Mucosa-associated lymphoid tissue, Gut-associated lymphoid tissue). **Cells of the immune system:** Hematopoiesis, Biology, Development and Functions of PMNLs, NK cells, Macrophages, T-Lymphocytes, B-Lymphocytes, Dendritic cells	**14h**
2	**Antigens, and Antibodies:** Antigens, Immunogens and Haptens, Factors influencing immunogenicity, adjuvants, epitopes, Structure and functions of immunoglobulins, Synthesis of immunoglobulins, Genetic basis of immunoglobulin diversity. **MHC molecules:** Types, structure, diversity and functions **Antigen recognition:** Thymus dependent and independent Antigens, Clonal selection and immunological memory of B and T cells, Antigen processing and presentation (Endogenous pathway, Exogenous pathway, Cross presentation), Superantigens. **Monoclonal Antibodies:** Hybridoma technology and production of mAbs, types, and applications. Advantages and disadvantages of mAbs in therapy.	**12h**
3	**Immune System in Health and Disease:** Immunological Tolerance and Autoimmunity, Autoimmune Diseases (Organ specific autoimmune diseases-Graves' disease, Myasthenia Gravis, Systemic autoimmune diseases-Multiple Sclerosis, Rheumatoid Arthritis, Systemic Lupus Erythematosus), Immunosuppression, Hypersensitivity (Type I, II, III & IV). **Vaccines and Vaccination:** Principles of vaccination, Immune response to vaccines (Primary and Secondary response), Whole-Organism vaccines, Purified macromolecules as vaccines, Recombinant vaccines, DNA vaccines, Multivalent subunit vaccines and Edible vaccines, Vaccine safety, Reverse vaccinology.Overview of COVID-19 vaccines. **Primary & Secondary Immuno-Deficiency Disorders: Primary:** Wiscott-Aldrich syndrome, Severe combined immunodeficiency disease (SCID), DiGeorge syndrome, Ataxia-telangectasia, Leucocyte adhesion defects, Chronic granulomatous disease, X-linked agammaglobulinemia, Complement deficiencies. Gammopathies (Multiple	**12h**

	myeloma). **Secondary:** AIDS, Malnutrition, Drug regimen, Diabetes, Chronic infection	
4	**Clinical Immunology**: **Transplantation of tissues and organs:** Nomenclature of transplantations, Transplantation reactions, HvG and GvH. Exception from rejections, Major and minor blood groups, Blood transfusion, tissue typing, Kidney and bone marrow transplantations. Immunosuppressive drugs. **Tumor immunology**: Neoplasms, tumor-associated antigens, immune response to tumor antigens, immunologic factors favoring tumor growth, immune surveillance,Tumor necrosis factor α and β.Metastatic processes, Immunodiagnosis, Antitumour drugs, Immunotherapy. **Immunological Techniques:**. *In vitro* antigen-antibody reactions, serotyping, agglutination, complement fixation, immunoprecipitation, Immunodiffusion, ELISA, RIA, IHC, Immunoelectrophoresis.	**10h**

Learning Outcomes: After studying this paper the students will know –

a. Organs, tissues, cells and molecules of the immune system
b. Antibodies and infectious disorders
c. The immunological methods used to detect the disease
d. How the knowledge of immunology can be transferred into clinical decision-making through case studies presented in class.

References:

1. Abbas A.K., Lichtman A.H. and Pillai S. (2014). Cellular and Molecular Immunology (10thEdition). Online Access: Elsevier Health Sciences.
2. Abbas, AK., Andrew,H., Lichtman, H., Pillai, S. 2012.Basic Immunology: Functions andDisorders of the Immune System, ; Saunders
3. Abul, K.A., Andrew, H. L. and Shiv, P. 2019. Basic Immunology: Functions and Disorders ofthe Immune System. Elsevier India.
4. Ajoy, P. 2015. Textbook of Immunology: including Immunotechnology & Immunotherapy.Books & Allied Press.
5. Ashim, K. C. 2006. Immunology and Immunotechnology (1st ed.). Oxford University Press.
6. Berg J.M., Tymoczko J.L. and Stryer L. (2002). Biochemistry (5th Edition). Internationaledition: WH Freeman & Company Limited
7. Brostoff, J., Seaddin, J. K., Male, D. and Roitt, I. M. 2002. Clinical Immunology. London:Gower Medical Pub.
8. Chapel,H., Haeney,M., Misbah,S., Snowden, N. 2014. Essentials of Clinical Immunology;Wiley-Blackwell
9. Coico, R. and Sunshine, G. 2015. Immunology – A Short Course (7th ed.). Wiley.
10. Delves P.J., Martin S.J., Burton D.R. and Roitt I.M. (2011) Roitt's essential immunology: JohnWiley & Sons.
11. Hawley,L., Clarke, B., Ziegler, RJ. 2013. Microbiology and Immunology; LWW
12. Madhavee Latha, P. 2012. A Textbook of Immunology. S. Chand Press.
13. Murphy, K., Travers, P., Walport, M. and Janeway, C. 2012. Janeway's Immunobiology.Taylor & Francis.
14. Nelson D.L., Lehninger A.L. and Cox M.M. (2008). Principles of Biochemistry (12th Edition).Macmillan.
15. Owen J.A., Punt J., Stranford S.A. and Jones P.P. (2013) Kuby immunology: WH FreemanNew York.
16. Parham, P. 2005. The Immune System. New York: Garland Science.
17. Paul, W. E. 2012. Fundamental Immunology. Raven Press.
18. Peter,DJ., Seamus, MJ., Dennis, BR. 2011. Roitt's Essential Immunology; Wiley & Sons,Incorporated, John
19. Pinchuk, G. 2001. Schaum's Outline of Immunology; McGraw-Hill

Ramesh, S. R. 2016. Immunology. Mc Graw Hill Education India Pvt. Ltd.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.99	2.99	2.99	2.99	2.99	2.74	2.74	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry III Semester	Metabolism of Amino acids and Proteins Course Code: 23F302	HC – Hard Core
Total Hours: 48	Credits: 03 (LTP - 3:1:0)	Total Marks: 15+15+70 = 100

Module	Course contents	
1	**Proteins:** General mechanisms of degradation in cells; ubiquitin-proteosome pathway, lysosomal pathway. Degradation and biosynthesis of glycoproteins and proteoglycans. Degradation and Biosynthesis of heme and porphryns.	12h
2	**Non ribosomal peptide synthesis and Biosynthesis of physiologically active amines:** glutathione, gramicidine. Biosynthesis of physiologically active amines; serotonin, histamine, dopamine, norepinephrine and epinephrine.	12h
3	**Degradation and biosynthesis of individual amino acids:** Aliphatic, aromatic, and branched chain amino acids. Role of cofactors; PLP and THF in amino acid metabolism. Deamination, transamination, decarboxylation desulphuration process. Differences in the pathways in microorganisms, plants and animals. Regulation of amino acid biosynthesis;transglutaminase cycle, urea cycle.	12h
4	**Intermediatory metabolism and In born errors of metabolism:** Ketogenic and glucogenic amino acids. In born errors of amino acid degradation; PhenylKetonuria, alkaptonuria, maple syrup urine. Role of Hormones in the regulation of protein and amino acid metabolism: HPA axis. Adrenal gland and pancreatic hormones	12h

Learning Outcomes: After studying this paper the students will know –

a. Chemistry of protein and amino acid metabolism. .
b. Importance of protein and amino acid metabolism.
c. Role of hormones in the regulation of protein
d. Regulation of and disorders of amino acid metabolism.

References:

a. Berg J.M., Tymoczko J.L. and Stryer L. (2006). Biochemistry: international edition: WH Freeman & Company Limited.
b. Devlin T.M. (2020). Textbook of biochemistry: with clinical correlations (8th Edition). New York: J. Wiley & Sons.
c. Nelson D.L., Lehninger A.L. and Cox M.M. (2008). Principles of biochemistry: Macmillan.
d. Voet D. and Voet J.G. (2010). Biochemistry (4th Edition). New York: J. Wiley & Sons.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.99	2.99	2.99	2.99	2.99	2.74	2.74	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry III Semester	Practical 3A Experiments in Immunology and amino acid metabolism; Study Tour and tour report.) Course Code: 23F303	HC – Hard Core
Total Hours: 64	Credits: 02(LTP - 0:0:4)	Total Marks: 15+15+70 = 100

Course objectives:

- To gain proficiency in laboratory techniques in immunology and amino acid metabolism.
- To visit the industries and national laboratories involved in immunological research and metabolic studies and present a report on the same.

Course Outcomes:

- Proficiency in laboratory techniques in immunology
- Techniques in amino acid metabolism.
- Identification of antibody purity.
- Proficiency in preparing a tour report document after visiting immunology or biology based industries and research institutes.

1. Estimation of proteins using Bradford's method.
2. Estimation of proteins using Bicinchoninic acid method.
3. Estimation of A/G ratio in blood.
4. Estimation of aminoacids using ninhydrin method.
5. Purification of IgG.
6. Slide agglutination test/ Blood grouping.
7. Immunoprecipitation test: Ochterlony double diffusion assay.
8. Estimation of nitric oxide.
9. Estimation of Urea by DAMO method and Clinical significance.
10. Estimation of uric acid and Clinical significance.
11. Estimation of Creatinine and Clinical significance.
12. Study tour and report.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	2	3	2	3	3	3	3	3	3
Weighted average	3	2.75	3	2.75	3	2.75	3	3	3	3	3	3
PO Attainment	2.99	2.74	2.99	2.74	2.99	2.74	2.99	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry III Semester	Practical 3B Experiments in Metabolism; Review of Literature Course Code: 23F304	HC – Hard Core
Total Hours: 64	**Credits: 02(LTP - 0:0:4)**	**Total Marks: 15+15+70 = 100**

Course objectives:

- To gain proficiency in metabolism related experiments.
- To articulate between different metabolic pathways.
- To understand the energetics of photosynthesis.
- To study the literature available about a specific scientific problem and prepare a standard document of Review of Literature, and present as a platform presentation.

Course Outcomes:

- Proficiency in metabolism related experiments.
- Proficiency to articulate between different metabolic pathways.
- Proficiency to understand the energetics of photosynthesis.
- Proficiency in studying the literature available about a specific scientific problem and prepare a standard document of Review of Literature, and present as a platform presentation.

1. Estimation of uric acid.
2. Estimation of purines.
3. Photo-oxidation of methylene blue.
4. Photosynthetic reduction of 2,6 di chloro phenol indophenol.
5. Identification and assessment of leguminous root nodules for Rhizobium.
6. Oxygen generation during photosynthesis.
7. Estimation of glutathione.
8. Estimation of bilirubin.
9. Review of Literature.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	2	3	2	3	3	3	3	3	3
Weighted average	3	2.75	3	2.75	3	2.75	3	3	3	3	3	3
PO Attainment	2.99	2.74	2.99	2.74	2.99	2.74	2.99	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry III Semester	**Metabolism of Nucleic Acids** **Course Code: 23F305**	**SC –Soft Core**
Total Hours: 48	**Credits: 04 (LTP - 3:1:0)**	**Total Marks: 15+15+70 = 100**

Learning Objectives: Students should study this paper to know –
a. The basics of nucleic acid metabolism. b. To understand the nitrogen metabolism.

	Course contents	
1	**Purines and pyrimidines:** Pathways of biosynthesis and degradation of nucleic acids, purines and pyrimidines, uric acid formation. Salvage pathways, de novo biosynthetic pathways andregulations.	**12h**
2	Gout and Lysch-Nyhan syndrome. Conversion of nucleotides to deoxynuclotides. Mchanisms of action of methotrexate, 5-fluorouridine, azathymidine. **Biosynthesis of cofactors:** NAD+, FAD and coenzyme A, polyamine biosynthesisand their metabolic role.	**12h**
3	**Photosynthesis:** Photosynthetic apparatus in plants, photosystems I and II, light harvesting antenna complex. Electron flow and phosphorylation; cyclic and noncyclic, oxygen evolution, Calvin cycle. C3, C4 and CAM cycle. Photorespiration, bacterial photosynthesis. Regulation of photosynthesis. RUBISCO.	**12h**
4	**Nitrogen metabolism**: Importance of nitrogen in biological systems, nitrogen cycle. Nitrogen fixation;symbiotic and non-symbiotic, nitrogenase complex, energetics and regulation. Formation of root nodules in legumes. Assimilation of nitrate and ammonium ion.	**12h**

Learning Outcomes: After studying this paper the students will know –
a. Chemistry of nucleic acid metabolism. .
b. Importance of nucleic acid metabolism.
c. Mechanism of photosynthesis
d. nitrogen metabolism.

References:

a. Berg J.M., Tymoczko J.L. and Stryer L. (2006). Biochemistry: international edition: WH Freeman &Company Limited.
b. Chatterjee C.C. (2017) Human physiology: Medical Allied Agency:CBS Publishers and Distributors Pvt.LTD.
c. Devlin T.M. (2020). Textbook of biochemistry: with clinical correlations (8th Edition). New York: J.Wiley & Sons.
d. Nelson D.L., Lehninger A.L. and Cox M.M. (2008). Principles of biochemistry: Macmillan.
e. Voet D. and Voet J.G. (2010). Biochemistry (4th Edition). New York: J. Wiley & Sons.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.99	2.99	2.99	2.99	2.99	2.74	2.74	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry III Semester	Research Methodology, Biostatistics and Bioinformatics Course Code: 23F306	SC – Soft Core
Total Hours: 60	Credits: 04 (LTP - 3:0:0)	Total Marks: 15+15+70 = 100

Module	Course contents	
1	**Research Methodology:** Definition –Characteristics, types. Identification of the problem, assessing the status of the problem, formulating the objectives, preparing the design (experimental or otherwise), actual investigation. Review of literature, Hypothesis, Data– Categorical, nominal & Ordinal. Methods of Collecting Data: Observation, field investigations, direct studies, questionnaires: Sources, methods-questionnaires, records, archives. Validation and standardization of the methods, modification and experimental design. Types of Report – Technical Reports and Thesis – Significance – Different steps in the preparation – Layout, structure and Language of typical reports - Illustrations and tables. Bibliography: Citations and references; Plagiarism – Citation and Acknowledgement (citation softwares) **Ethical Issues** – Ethical Committees, Types of experiments that require ethical clearance –GMO, animal ethics and human ethical guidelines, socio-environmental responsibilities. Commercialization – copy right – royalty – Intellectual Property rights (IPR) and patent law; Indian and International scenario, WIPO, – Reproduction of published material – Plagiarism – Citation and Acknowledgement – Reproducibility and accountability. Helsinki declaration.	12h
2	**Introduction to Biostatistics:** Introduction: Population, sample, sampling techniques, random sample. Mean, median, mode, range, variance, coefficient of variation, frequency, standard deviation, standard error. **Statistical tests:** Probability: Rules of probability, binomial distribution, normal distribution, area under the curve, Z value, choosing sample size, hypothesis testing, Student's t test. One way ANOVA, correlation and regression. Goodness of fit, test of independence. Non parametric statistics, sign test, rank sum test, rank correlation. **Statistics softwares.** Representation of statistical data line graph, histogram, bar diagram, pie chart, scatter diagram. Collection of data: Relevance of sample size.	24H
3	**Bioinformatics:** Biological databases: Introduction, classification of biological databases, retrieval of biological database systems. Molecular Modeling Database at NCBI, PDB, Molecular visualization software (RASMOL). Phylogenetics Clustal. Prediction of genes (Gene finder, ORF finder). Sequence comparison and database search: Introduction, different types of alignment. Iterative refinement methods, pattern matching in DNA and protein sequences, PAM matrices, BLAST, FAST and FASTA. nucleotide sequence analysis, single nucleotide polymorphism, primer designing. Emboss, prosite, prodom, protein expression profiling. Prediction of Secondary structure of proteins, softwares for secondary structure prediction, protein famil ies and classification, (trans membrane regions). CATH and SCOP. Introduction to drug designing: In silico analysis, physico-chemical property	24H

	prediction, aqueous solubility, Lipinski's rule of five.	
4	**Docking methods:** Three dimensional descriptions of binding site environment and energy calculation, automatic docking method. Three dimensional database search approaches, protein-protein interactions, design of ligands, drug-receptor interactions, automated structure construction methods	**6h**

Learning Outcomes: After studying this paper the students will know.

1. Basics and ethics in research. Various streams of ethical responsibilities of a researchers at societal, environmental, legal andemotional ethics.
2. Importance of plagiarism.National and international guidelines about Intellectual property rights.Basics and ethics inresearch.Writing and analysis of research articles.
3. Knowledge of basic statistical methods to solve problems.
4. The importance of statistics in research and prepares them for a career in research. Understanding about the sequence analysis tools and also about the drug discovery.

References:

a. Bulakh P.M., Patki P.S. and Chodhary A.S. (2010). Research Methodology. Expert Trading Corporation Dahisar West, Mumbai.
b. Garg B.L., Karadia R., Agarwal F. and Agarwal U.K. (2002). An introduction to Research Methodology. RBSA Publishers.
c. Gupta S.P. (2008). Statistical Methods. (37th Edition). Sultan Chand and Sons. New Delhi.
d. Kothari C.R.(2008). Research Methodology: Methods and Techniques. (2nd Edition). New Age International Publishers, New Delhi.
e. Leon A. and Leon M. (2012). Internet for everyone (15th Edition). Vikas Publishing House.
f. Sinha S.C. and Dhiman A.K. (2002). Research Methodology. Ess Ess Publications.
g. Wadehra B.L. (2000). Law relating to patents, trade marks, copyright designs and geographical indications. Universal Law Publishing.
h. Amdekar, S.J. 2014. Statistical Methods for Agricultural and Biological Sciences. Narosa Publishing House.
i. Baxevamis, A.D. and Ouellette, F. B. E. 2004. Bioinformatic: A practical guide to the analysis of genes and proteins. John Wiley & Sons.
j. Chen, D. G., and Zhao, Y. 2018. New Frontiers of Biostatistics and Bioinformatics. Springer.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.99	2.99	2.99	2.99	2.99	2.74	2.74	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry III Semester	Human Physiology with clinical relevance. Course Code: 23F307	SC –Soft Core
Total Hours: 48	Credits: 04 (LTP - 3:1:0)	Total Marks: 15+15+70 = 100

Learning Objectives: Students should study this paper to know –

a. To study different systems operating in living organisms.

Module	Course contents	
1	**Blood:** Composition, cells, plasma proteins and lipoproteins, preparation of plasma,serum, and different blood cells. Erythrocytes; shape and function. WBC; types, differential count and functions. Platelets and their function. Half-life of blood cells. Buffer systems, hemostasis, blood clotting, different pathways of blood clotting, mechanisms of initiation of clotting pathways, various enzyme complexes digestionof clot, anticoagulants, blood volume, blood pressure and its regulations. Plasma lipoproteins and their functions, HDL, LDL, VLDL, chylomicrons.	12h
2	**Respiratory System**: Lungs, structure and functions, gas exchange, oxygen binding by hemoglobin, factors affecting oxygenation and acid-base balance. **Nervous system:** Structure of a neuron, nerve transmission, mechanism of neurotransmission, action potential, synapse, different types of neurotransmitters, stimulatory and inhibitory, central and peripheral nervous system, neuro-muscular junction. Parts of brain, brain-gut interaction, ion channels, types of ion-channels, secretion of neurotransmitters, CSF; composition and function.	12h
3	**Excretory System**: Ultra structure of the nephron, glomerular filtration, filtration rate, mechanism of formation of urine, acid-base balance. Consequences of imbalance in acid-base balance, formation of kidney stones. Kidney function tests **Hepatobiliary System**: Anatomy of the liver, blood supply, cells; hepatocytes, endothelial cells and Kupffer cells, secretory and excretory functions and formationof bile. Role of liver in detoxification.	12h
4	**Digestive System**: GI tract, digestion and absorption of carbohydrates, proteins and lipids. Mechanism of HCI production in the stomach. Gastrointestinal hormones and role of pancreas in digestion. **Muscle physiology**: Types of muscle, structure of skeletal muscle and smooth muscle, muscle proteins; actin, myosin, tropomyosine, troponins. Mechanisms of skeletal and smooth muscle contraction, sliding filament model.	12h

Learning Outcomes: After studying this paper the students will know –

a. Biological processes involving membranes.
b. Importance of membranes in the biological system
c. Nutritional significance
d. Disorders related to nutrition and digestion.

References:

a. Berg J.M., Tymoczko J.L. and Stryer L. (2006). Biochemistry: international edition: WH Freeman & Company Limited.
b. Devlin T.M. (2020). Textbook of biochemistry: with clinical correlations (8th Edition). New York: J. Wiley & Sons.
c. Guyton and Hall. Human Physiology.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted average	3	3	3	3	3	2.75	2.75	3	3	3	3	3
PO Attainment	2.99	2.99	2.99	2.99	2.99	2.74	2.74	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry III Semester	Internship Course Code: 23F308	SC – SOFT Core
Total Hours: 128	Credits: 04 (LTP - 0:0:4)	Total Marks: 15+15+70 = 100

Objectives:

To gain industrial experience and enhance theoretical knowledge in practical application
To develop new skills and abilities
Explore career options
Build professional networks and connections

Internship:

Each student shall enroll for an internship at an R & D laboratory and learn industrial skills in life sciences over a period of 1 month (non-class hours) and submit a report on the principles and applications of the scientific protocols. The student shall be evaluated for C1 and C2 by the internal faculty while for C3 the student shall be evaluated for their "Knowledge on the scientific protocols presented in the report" by two examiners (internal and external) during the end semester examination.

Outcomes:

1. Evaluate career goals and aspirations
2. Enhance resume and job prospects
3. Develop problem solving and critical thinking skills
4. Gain insight into company culture and operations.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3
Weighted average	2	2	2.75	2.25	2	2	3	3	3	3	3	3
PO Attainment	1.99	1.99	2.74	2.24	1.99	1.99	2.99	2.99	2.99	2.99	2.99	2.99

IV Semester

M.Sc. Biochemistry IV Semester	Project Work Course Code: 23F401	HC –Hard Core
Total Hours: 320	**Credits: 10 (LTP - 0:2:20)**	**Total Marks: 15+15+70 = 100**

Objective:

To enhance the laboratory skills of the student.

To make the students efficient in identifying a research problem and plan a research work.

Project work:

Each student shall identify an individual/unique research problem and conduct independent mini research project for 3-4 months (non-class hours) and submit a dissertation with the research findings and conclusion. The student shall be evaluated for C1 and C2 by the internal faculty while for C3 the student shall be evaluated by two examiners (internal and external) for the students' "Knowledge on the scientific problem, protocols and inference of results presented in the report". The quality of work and efficiency of the defense will be evaluated by two examiners (internal and external) during the end semester examination.

Outcome:

1. Enhanced laboratory skills.
2. Efficiency in identifying a research problem and plan a research work.
3. Appropriate review of literature and selection of proper laboratory methods. Application and importance of statistics.
4. Make the appropriate conclusions of the research data.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3
Weighted average	2	2	2.75	2.25	2	2	3	3	3	3	3	3
PO Attainment	1.99	1.99	2.74	2.24	1.99	1.99	2.99	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry IV Semester	Clinical Biochemistry Course Code: 23F402	SC – Soft Core
Total Hours: 48	Credits: 03(LTP - 3:1:0)	Total Marks: 15+15+70 = 100

Learning Objectives: Students should study this paper to know –

a. The basics of clinical biochemistry.
b. Clinical Diagnosis of different diseases.
c. Different types of clinical diagnosis.

Module	Course contents	
1	**Basic concepts:** Health and disease. Normal and pathological changes, affecting cells in the body. Celldeath and the physiological causes; physical, chemical, biological agents and nutritional deficiency. Blood: Composition, cells, functions of plasma proteins and lipo-proteins in diseases. Disorders of hemoglobin; thalassemia, sickle cell anemia. Anemias; microcytic, normocytic and macrocytic. Diagnostic enzymology: Clinically important enzymes; alkaline phosphatase, AST, ALT and isoenzymes of creatine kinase and LDH	**12h**
2	**Endocrine system:**Endocrine system: Overview of the physiology of endocrine system. Laboratory diagnosis to assess the function of pituitary, thyroid, adrenals and gonads. Disroders; graves disease, Hashimoto disease, Addission's disease, hypo and hyper secretion of hormones. Acromegaly, gigantism.	**12h**
3	**Hepatobiliary, Kidney, and GI System:**Hepatobiliary system: Overview of hepatobiliary system. Biochemical indices ofhepatobiliary diseases. Diagnosis of liver function tests. Bile pigments - formation of bilirubin, urobilinogen, bile acids. Jaundice; prephapatic, hepatic and post hepatic. Diseases of the liver - Hepatitis cholestasis, cirshosis, fatty liver and gallstones. Overview of renal system. Assessment of renal function; creatine clearance, renal calculi, uremia, laboratory investigation of kidney disorders. Gastrointestinal disorders: Fractional gastric analysis, hypo and hyper acidity, gastric ulcers, malabsorption syndrome, steatorrhea and diarrhoea.	**12h**
4	**Cardiac, Skeletal Muscles and Nervous System:** Overview of heart and skeletal muscles, CNS. Major Cardio vascular system, atherosclerosis, risk factors and pathogenesis. Diagnosis and prognosis. Assessmentof CSF.	**12h**

Learning Outcomes:

A) Application of Biochemistry in the clinical diagnosis. B) Importance of biochemical parameters in the clinical diagnosis. C) Hepatobiliary disorders D) GI tract disorders and diagnosis.

References:

a. Berg J.M., J.L. and Stryer L. (2006). Biochemistry: international edition: WH Freeman & Company Limited.
b. Chatterjee C.C. (2017). Human physiology: Medical Allied Agency:CBS Publishers and Distributors Pvt. LTD.
c. Devlin T.M. (2020). Textbook of biochemistry: with clinical correlations (8th Edition). New York: J. Wiley & Sons.
d. Guyton A.C. and Hall J.E. (2006). Text book of Medical Physiology. Elsevier India Pvt. Ltd. New Delhi.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3
Weighted average	2	2	2.75	2.25	2	2	3	3	3	3	3	3

M.Sc. Biochemistry IV Semester	Biotechnology Course Code: 23F403	SC – Soft Core
Total Hours: 48	**Credits: 03 (LTP - 3:0:0)**	**Total Marks: 15+15+70 = 100**

Course Objectives

- To study the basics of microorganisms and its use in fermentation.
- To study the various factors governing the growth of microorganisms at laboratory scale and at industrial fermentation scale
- To study the methodology used in animal and plant cell culture.

Module	Course contents	
1	Historical Aspects - Discovery of microorganisms. Theory of spontaneous generation. Era of Louis Pasteur. Microbes and fermentation. Microbes and diseases Koch's Postulates. General characteristics: morphology, nomenclature and classification of bacteria, yeast, molds, fungi actinomycetes, rickettsia. Techniques - Isolation and culture of microorganisms - aerobic and anaerobic culture methods, culture media. Isolation of pure colony, characterization. Staining - Gram stain acid fast, endospore, flagella.	**12h**
2	Microbial Nutrition - Factors influencing growth, growth curve of bacteria. Measurement of growth, continuous culture, synchronous culture chemostat. Auxotrophs, autotrophs, heterotrophs, microorganisms. Growth curve and Diauxic growth curve. Methods of Control of Microorganisms - Bacteriostatic and bacteriocidal agents. methods of cultivations and preservation of microbes. Mechanisms of disinfection and sterilization. Physical and chemical methods.	**12h**
3	**Cell culture techniques:** Introduction to plant and animal tissue/cell culture. Laboratory design, aseptic conditions, equipment and materials for cell culture. Different constituents of culture medium, types of media and their applications. **Plant cell culture**: Micro propagation, callus culture, haploid production, somatic embryogenesis, somatic hybridization, cybridization and somaclonal variation. Production of disease free plants. **Animal cell culture:** Culture techniques, media, preparation of primary culture; disaggregation of tissue and primary cultures, chick embryo, HUVEC, characterization of cultures, ploidy, cell doubling time.	**12h**
4	**Cell lines:** Characteristics and routine maintenance, cell separation techniques. Measurement of viability and cytotoxicity. Scaling-up of animal cell culture; bioreactors used in animal cell culture, amplified cultures, continuous cultures andtheir applications. **Industrial applications:** Fermentor; stirred fermentor, micro carrier, encapsulation, hollow fiber chambers, packed glass bead reactors. Cell immobilization techniques. haracterization of the cultured cells, measuringparameters of growth. Cell synchronization, Somatic cell fusion, cell cloning and cryopreservation. **Applications of animal cell culture:** Organ and histotypic cultures; three dimensionalculture, tissue engineering; example skin .	**12h**

Course Outcomes

- Understand the principle and methodology employed in the growth of microorganisms
- Understand the various parameters affecting the growth of industrially important microorganisms.
- Understand the importance of plant and animal cell culture to produced therapeutically important secondary metabolites
- Understand the applications of industrial fermenters.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3
Weighted average	2	2	2.75	2.25	2	2	3	3	3	3	3	3
PO Attainment	1.99	1.99	2.74	2.24	1.99	1.99	2.99	2.99	2.99	2.99	2.99	2.99

M.Sc. Biochemistry IV Semester	**Human Nutrition** **Course Code: 23F405**	**SC – Soft Core**
Total Hours: 48	**Credits: 04 (LTP - 3:1:0)**	**Total Marks: 15+15+70 = 100**

Learning Objectives: Students should study this paper to know –

a. To study nutritional composition of foods.
b. Nutrition-related disorders
c. Dietetics

Module	Course contents	
1	Nutrition: Concepts of macro and micro nutrients, essential nutrients and their classification. Food groups, proximate analysis of foods, chemical and biological analysis for nutrients. Food as source of energy, methods of determining energy value of foods, calorimetry, physiological fuel value, daily requirement of energy, high and low calorie diets. Basal metabolic rate (BMR), factors affecting BMR, specific dynamic action of foods.	**12h**
2	Carbohydrates: Dietary sources, dietary fiber, essentiality of carbohydrates.Proteins: Essential amino acids, evaluation of nutritive value of dietary proteins, PER, BV, nutritional classification of proteins, supplementary value of proteins, protein calorie malnutrition; Kwashiorkar and Marasmus.	**12h**
3	Fats: Sources, invisible fat, essential fatty acids, PUFA. Vitamins: Fat soluble and water soluble vitamins, provitamines, antivitamins, dietary sources, daily requirements, structure and function. Deficiency symptoms of B and C vitamins and fat soluble vitamins, hypervitaminosis, vitamin - like compounds.	**12h**
4	Minerals: Macro and micro nutrients, sources, requirements, functions and deficiency symptoms. Water metabolism; distribution in body, water balances and factors affecting water balance. Diet: Recommended daily allowances, special nutrition for infants, children, during pregnancy, lactation and old age. Nutrition for diabetes and cardiovascular disease patients. Wellness diets, fitness diets, obesity and BMI,	**12h**

Learning Outcomes: After studying this paper the students will know –

a. Biological processes involving digestion, absorption of foods.
b. Importance of nutritional composisiton
c. Nutritional significance for infants, nursing mothers, pregnant, children and adults

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3
Weighted average	2	2	2.75	2.25	2	2	3	3	3	3	3	3

M.Sc. Biochemistry IV Semester	Plant Biochemistry Course Code:23F404	SC – Soft Core
Total Hours: 48	**Credits: 04 (LTP - 3:1:0)**	**Total Marks: 15+15+70 = 100**

Learning Objectives: Students should study this paper to know –

a. To study different systems operating in plants.
b. To study different plant hormones and its function
c. To study solute transport.
d. To understand stress and host parasite interaction.

Module	Course contents	
1	Photosynthesis: Photosynthetic apparatus in plants, photosystems I and II, light harvesting antenna complex. Electron flow and photophosphorylation; cyclic and noncyclic, oxygen evolution, Calvin cycle. C3, C4 and CAM cycle. Photorespiration, bacterial photosynthesis. Regulation of photosynthesis. RUBISCO. Nitrogen metabolism: Importance of nitrogen in biological systems, nitrogen cycle. Nitrogen fixation; symbiotic and nonsymbiotic, nitrogenase complex, energetics and regulation. Formation of root nodules in legumes. Assimilation of nitrate and ammonium ion.	**12h**
2	Plant hormones: Biosynthesis, storage, breakdown and transport. Physiological effects and mechanisms of action of auxines, gibberlines, cytokinins, ethylene, abscisic acid. Sensory photobiology: Structure, function and mechanisms of action of phytochromes, cryptochromes and phototropins, stomatal movement, photoperiodism and biological clocks. Seed dormancy, inception of germination. Germination and growth regulators, juvenility, vernalization.	**12h**
3	Solute transport and photo assimilate translocation: Uptake, transport and translocation of water, ions, solutes and macromolecules from soil through xylem and phloem. Transpiration, mechanisms of loading and unloading of photoassimilates. Phytochemicals: Extraction, fractionation and characterization. Secondary metabolites - Terpenes, phenols, flavonoids and nitrogenous compounds and their roles in plant physiology and as alternative medicine.	**12h**
4	Stress physiology: Responses of plants to biotic (pathogen and insects) and abiotic (water, temperature and salt) stresses; mechanisms of resistance to biotic stress and tolerance to abiotic stress. Host parasite interaction: Recognition and entry processes of different pathogens like bacteria, viruses, alteration of host cell behavior by pathogens, virus-induced cell transformation, pathogen-induced diseases in plants, cell-cell fusion in both normal and abnormal cells and defense system in plants.	**12h**

Learning Outcomes: After studying this paper the students will know –

[1] Biological processes involving membranes.
[2] Importance of membranes in the biological system
[3] Nutritional significance for plants
[4] Stress physiology in plants
[5] Transportation of ions and molecules

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3
Weighted average	2	2	2.75	2.25	2	2	3	3	3	3	3	3

Continuous Formative Evaluation/Internal Assessment (HC, SC & OE)

Credit Distribution: The Choice Based Credit System (CBCS) comprises Hard Core, Soft Core subjects for Biochemistry Students and Open Elective for students other than Biochemistry.

Following shall be the minimum and maximum subjects per semester:

The credit pattern is Lecture (L); Tutorial (T); Practical (P); (L: T: P) Pattern.

Course is of 4 credits, and the different credit distribution patterns in L: T: P format is:

0 : 0,	2 : 1,	1 : 2,	0 : 3,	3 : 0,
1 : 1,	2 : 0,	0 : 2,	1 : 0,	0 : 1,
2 : 2,	4 : 0,	0 : 4,	1 : 3,	3 : 1,

The concerned BoS will choose the convenient credit pattern for every course based on the requirement.

One semester period is 16 weeks of teaching and learning.

Duration of semester is 20 weeks that includes semester end examinations.Credit Pattern:

Hard Core: 3 – 6 Credits **Soft Core:** 2 – 4 Credits **Open elective:** 4 Credits

Project Work: 6 Credits

Course Type	Credits
Hard Core	Minimum Credits - 42 and Maximum Credits - 52
Soft Core	Minimum Credits – 16
Open Elective	Minimum Credits - 4

- A Candidate can enroll for **maximum of 24 Credits per semester** inclusive of OpenElective earned from the other Departments.
- A Candidate has to earn a minimum of **76 Credits** for successful completion of a Masters degree.
- A minimum 76 Credits and additional 18 Credits (76 + 18 = 94 Credits) shall acquire add on Proficiency Diploma.

Continuous Assessment Pattern:

The details of continuous assessment (30:70 patterns) are summarized in thefollowing table:

Component	Syllabus in a Course	Weightage	Period of Continuous Assessment	Marks
C1	First 50%	15%	First half of the semester To be consolidated by 8thweek	15
C2	Remaining 50%	15%	Second half of the semester. To be consolidated by 16thweek	15
C3	Semester-end examination (All units of the course)	70%	To be completed during 18th-20th Week.	70

Continuous Assessment	Time Duration	Marks		Minimum 30% and an aggregate of 40% to declare pass
		Max	Min	
C1	1 week to 8 weeks	15	4.5	
C2	9 week to 16 weeks	15	4.5	
C3	Complete 16 weeks	70	21	

Theory evaluation:

Component – I (C1): Periodic Progress, Progress Reports, test (15%) calculated for 15marks
Component – II (C2): Periodic Progress, seminar, test (15%) calculated for 15marks)
Component III: (C3): Final exam (end semester exam for 70marks) (70%)

Practical evaluation:

Component – I (C1): Periodic Progress, Laboratory record and Progress Reports (15%)
Component – II (C2): Results of Work, tour report, assignment, class tests, laboratory exercise and Draft Report (15%)
Component III: (C3): (70%) Practical exams to be conducted for 6 hours, students will prepare reagents and perform the experiments, report to the examiners. A viva voce will be conducted during practical examination for each student and marks are allotted accordingly from the experimental efficiency and viva.
In case a candidate secures less than 30% in C1 and C2 put together in a course, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course.

Minor/ Major Project Evaluation:

Right from the initial stage of defining the problem, the candidate has to submit the progress reports periodically and also present his/her progress in the form of seminars in addition to the regular discussion with the guide. Components of evaluation are as follows:
Component – I (C1): Periodic Progress and Progress Reports (15%)
Component – II (C2): Results of Work and Draft Report (15%)
Component– III (C3): Final Viva-voce and evaluation (70%).
The report evaluation is for 40% and Viva-voce examination is for 30%.
In case a candidate secures less than 30% in C1 and C2 put together in a course, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course.

SCHEME OF EXAMINATION DEPARTMENT OF STUDIES IN BIOCHEMISTRY								
Program	***Title of Course***	***L:T:P***	***Credit***	***C1***	***C2***	***C3***	***Total***	***Subject Code***
Master of Science in Biochemistry	Fundamentals of Biochemistry	3:1:0	4	15	15	70	100	23F101
	Techniques in Biology	3:1:0	4	15	15	70	100	23F102
	Molecular Cell Biology	3:1:0	4	15	15	70	100	23F103
	Bioorganic and Bioinorganic Chemistry	3:0:0	3	15	15	70	100	23F104
	Practical 1A : Experiments in Biological techniques andBioorganic chemistry & Tour Report (Laboratory Visit and Tour Report)	0:0:2	2	15	15	70	100	23F105
	Practical 1B : Experiments in Cell Biology, Genetics andBioinorganic chemistry & Seminar	0:0:2	2	15	15	70	100	23F106
	Genetics	3:0:0	3	15	15	70	100	23F107
	Membrane Biology	3:0:0	3	15	15	70	100	23F108
	Molecular Biology	3:1:0	4	15	15	70	100	23F201
	Enzymology	3:0:0	3	15	15	70	100	23F202
	Practical 2A: Experiments in Molecular Biology and EnergyMetabolism; Laboratory visits and Tour report	0:0:2	2	15	15	70	100	23F203
	Practical 2B: Experiments in Enzymology and Research Paperpresentation	0:0:2	2	15	15	70	100	23F204
	Metabolism of Lipids	3:0:0	3	15	15	70	100	23F205
	Metabolism of Carbohydrates	3:0:0	3	15	15	70	100	23F206
	Endocrinology	3:0:0	3	15	15	70	100	23F207
	Dissertation – Review of Literature	0:2:0	2	15	15	70	100	23F208
	OE: Biology for Non-biologists	2:2:0	4	15	15	70	100	23F209
	OE: Nutrition in Health and Disease	2:2:0	4	15	15	70	100	23F210
	Immunology	3:1:0	4	15	15	70	100	23F301
	Metabolism of Amino Acids and Proteins	3:1:0	4	15	15	70	100	23F302
	Practical-3A: Experiments in Immunology and amino acid metabolism. Study tour and tour report.	0:0:2	2	15	15	70	100	23F303
	Practical 3B: Experiments in Metabolism and Review of Literature.	0:0:2	2	15	15	70	100	23F304
	Metabolism of Nucleic Acids	3:1:0	4	15	15	70	100	23F305
	Research Methodology, Biostatistics, and Bioinformatics	3:1:0	4	15	15	70	100	23F306
	Human Physiology with clinical relevance.	3:1:0	4	15	15	70	100	23F307
	Internship	0:0:4	4	15	15	70	100	23F308
	Research Project Work, Report and Viva Voce	0.0.10	10	15	15	70	100	23F401
	Clinical Biochemistry	3:0:0	3	15	15	70	100	23F402
	Biotechnology	3:0:0	3	15	15	70	100	23F403
	Plant Biochemistry	3:1:0	4	15	15	70	100	23F404
	Human Nutrition	3:1:0	4	15	15	70	100	23F405

Scheme of Question Paper for (50 marks)
To be calculated for 15 marks for C1 and C2

TIME: 2 HOURS **MAX. MARKS: 50**

I. Answer any FIVE of the following: [5X2=10]
1 to 6

II. Answer any FOUR of the following: [4X5=20]
1 to 5

III. Answer any TWO of the following: [2X10=20]
1 to 3

The C1 and C2 can be reduced to 25 marks over 1 hour.
Should be calculated for 15 marks (proportionately).
Marks from Seminar or assignment or Class Exercise also can be included.

Scheme of Question Paper for End Semester Examination (70 marks) C3
TIME: 3 HOURS **MAX. MARKS: 70**

I. Answer any ten of the following: [10X2=20]
1 to 12

II. Answer any four of the following: [4X5=20]
13 To 18

III. Answer any three of the following: [3X10=30]
19 to 23

****

Question Paper Pattern for Practical – C1 and C2

Time: 2 Hours **Max Marks: 50**

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1. Conducting an Experiment/Micro-preparation /Plant identification	20m
2. Critical comments /Identification/ Procedure Writing	10 m
3. Viva-voce examination	10m
4. Class Records/Submissions.	10m

****

The C1 and C2 can be reduced to 25 marks over 1 hour.
Should be calculated for 15 marks (proportionately).
Marks from Seminar or assignment or Class Exercise also can be included.

Question Paper Pattern for Practical – End Semester Examination C3

Time: 6 Hours **Max Marks: 70**

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1. Conducting Experiment/Micro-preparation /Plant identification	20m
2. Minor experiment/ Demonstrations	15m
3. Critical comments /Identification/ Procedure Writing	10m
4. Viva-voce examination	20m
5. Class Records/Submissions.	5m

****

APPROVED BY THE FOLLOWING BoS MEMBERS

Final.

Sl. No.	Member	Name and address	
1	Chairperson	**Dr. Mahadesh Prasad AJ, Professor,** DoS in Biochemistry School of Life Sciences, SBRMFGC (Autonomous) Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru	26/8/23
2	Expert Member	**Dr. S. R. Ramesh, Chief Scientist,** School of Life Sciences SBRMFGC (Autonomous), Pooja Bhagavat Memorial Mahajana, Education Centre, Mysuru	
3	Member	**Dr. Girish Chandran, Coordinator,** DoS in Biochemistry School of Life Sciences, SBRMFGC (Autonomous) Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru	
4	Member	**Dr. Kiran B.** , Assistant Professor, DoS in Microbiology School of Life Sciences, SBRMFGC (Autonomous) Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru	26/8/23
5	University Nominee	**Dr. Gopal Marathe K.,** **Professor,** DoS in Molecular Biology University of Mysore, Mysuru	26/08/2023
6	Member from another College	**Mr. Bhargava C.S., Assistant Professor,** Dept. of Biochemistry, Maharani's Govt. Science College (Autonomous), Mysuru	26/08/23
7	Expert Member from External University	**Dr. Naveen Y.P.,** Assistant Professor Dept. of Biochemistry, Adi Chunchanagiri University, Nagamangala, Mandya	Online
8	Expert Member from External University	**Dr. Kumar J.R.,** Professor JSS AHER, Mysuru	26/8/23
9	Industry Member	**Mr. Sagar Krishna Bhat,** Molecular Biologist KAYPEEYES BIOTECH Pvt. Ltd. 13 & 14, Food Industrial Area, Metagalli, Mysuru 16	—
10	Alumni Member	**Ms. Milana C.,** Clinical Data Manager Starmark Software, Mysuru	—

The BoS chairperson thanked all the members for their active participation and constructive suggestions.

CHAIRPERSON
BoS/BoE in Biochemistry
SBRR Mahajana First Grade College (Autonomous)
PG Wing-Pooja Bhagavat Memorial Mahajana Education Centre
Metagalli MYSURU-570 016

DEPARTMENT OF STUDIES IN BIOTECHNOLOGY

Motto

- To provide Biotechnology educational Program with impetus to generate quality workforce.
- To create awareness about potentials of Biotechnology with socio-ethical implications.
- To instil spirit of innovation and creativity in young minds with sound research aptitude.
- To nurture confident individuals who are effective contributors towards growth of the nation

Vision

Our vision is to produce competent biotechnologists who can employ premium processes and applications which will profoundly influence existing paradigm of agriculture, industry, healthcare and restoration of environment providing sustainable competitive edge to present society**.**

Mission of the department

- To develop academic excellence in the field of Life science to cater the need of modern Industry.
- Providing hands on experience in various laboratory techniques and sophisticated analyticalinstruments and offering placement training.
- Training & re-training the young students in the areas of applied Life science to become a world class Bio-technologist /Microbiologist/Biochemist
- Initiate multidisciplinary programs through academia industry interface with special emphasis onimplementation of bioprocess design and scale up.
- Emphasis on recent trends in bioengineering through organization of conferences, symposia,workshops.
- Faculty development programmers to nurture world class bioengineers

with a potential to innovate,invent and disseminate knowledge for the benefit of society and environment.

UPDATED REGULATIONS FOR CHOICE BASED CREDIT SYSTEM (CBCS) AND CONTINUOUSASSESSMENT GRADING PATTERN (CAGP) FOR M.Sc., BIOTECHNOLOGY PROGRAMME WITH EFFECT FROM 2019

PREAMBLE:

The University Grants Commission (UGC) has stressed on speedy and substantive academic and administrative reforms in higher education for promotion of quality and excellence. The Action Plan proposed by UGC outlines the need to consider and adopt Semester System, Choice Based Credit System (CBCS), and Flexibility in Curriculum Development and Examination Reforms in terms of adopting Continuous Evaluation Pattern by reducing the weightage on the semester- end examination so that students enjoy a de- stressed learning environment. Further, UGC expects that institutions of higher learning draw a roadmap in time bound manner to accomplish the above.

Mahajana Post Graduate Centre is an exclusive Post graduate wing of SBRR Mahajana First Grade College. The centre happens to be the largest PG Centre affiliated to University of Mysore. It was established in July 2003 with the motto “Enter to Learn, Departto serve”. The Centre is affiliated to University of Mysore and offers Post Graduation in the areas of direct relevance and value to the current generation of students. The Centre offers Post Graduate degree courses 14 disciplines and is poised to start new courses in the years tocome. The postgraduate wing is a member of well known professional bodies like CSI (Computer Society of India), ISTE (Indian Society for TechnicalEducation), NIPM (Nationalinstitute of Personal Management) and CII (Confederation of Indian Industry), academic andresearch collaborators with Zeus Biotech, CSIR-Indian Institute of Toxicology Research, Lucknow, Adichunchanagiri University & MMK And SDM Mahila Maha Vidyalaya, Mysore , so that the students are exposed to recent trends in the industry by attending programmes conducted by the above professional and academic and research organizations.

ABOUT THE COURSE:

The M.Sc., Biotechnology course of the University of Mysore is approved by theUniversity Grants Commission. All the courses in the programme are carefully designed to equip the

students for competitive exams like CSIR NET, SET etc., and also to write research proposals for grants. The Department is well furnished and provided with state-of- the-art laboratory facilities. The Department has highly qualified and experienced faculty forthe students to learn and experiment, hands on with techniques of great relevance to current day bio industries. Besides, the Centre also invites eminent Scholars, Scientists and Professors from university and research institution for special lectures, interactive sessions and symposia to enlighten students onmost recent developments in the subject. The students are also encouraged to take part in scientific seminars, group discussions and quiz competitions apart from the other extracurricular activities.

OBJECTIVE:

The Department of Studies in Biotechnology came into existence in the year 2004. The Department is striving to be recognized as a leader for offering societal relevant innovative Post Graduate education. It endeavors to build and enhance the capabilities of the future generation by providing quality education. The curriculum exposes the young graduates to the recent and applied knowledge of interdisciplinary branches of biotechnology.

The Department makes it their mission to provide socially and industrially relevant post-graduate education and training. The Department also undertakes research in fundamental area of applied science that utilizes living cells and cellular materials to create pharmaceutical, diagnostic, agricultural, environmental, and other products to benefit society.

The Department endeavors to build and enhance the capabilities of the future generation by providing quality education that provides a deep insight into the subject with the following objectives:

- To develop a detailed technical understanding of the key methods used in the contemporary biotechnology sector;
- To appreciate the techniques applied in biotechnology and advanced research;
- To acquire and critically appraise new data arising from the use of these techniques and to interpret the implications of such data;
- To develop an understanding of the commercial, financial and regulatory context in which the biotechnology sector operates.

Mahajana Education Society®Education to Excel

SBRR Mahajana First Grade College (Autonomous)Post Graduate Wing

Pooja Bhagavat Memorial Mahajana Education Centre

Metagalli, KRS Road, Mysuru-570016

(Re-Accredited by NAAC with 'A' Grade, college with potential excellence)

Post Graduate CBCS and CAGP Regulations (2019 onwards)

1. Title and Commencement: These Regulations shall be as per the University of Mysore regulations for Choice Based Credit System (CBCS) and Continuous Assessment Grading Pattern (CAGP) for M.Sc., Biotechnology program. These Regulations shall come into force from the academic year 2019-20 onwards .

2. Program Offered : M.Sc Biotechnology

3. Definitions

a. **Course:** Every course offered will have three components associated with the teaching-learning process of the course, name (i) Lecture – L (ii) Tutorial- T (iii) Practicals - P, where **L** stands Lecture session. **T** stands Tutorial session consisting participatory discussion / self study/ desk work/ brief seminar presentations by students and such other novel methods that make a student to absorb and assimilate more effectively the contents delivered in the Lecture classes. **P** stands Practice session and it consists of Hands on experience / Laboratory Experiments / Field Studies / Case studies that equip students to acquire the much required skill component.

b. In terms of credits, every one hour session of L amounts to 1 credit per semester anda minimum of two hour session of T or P amounts to 1 credit per semester, over a period of one semester of 16 weeks for teaching-learning process. The total duration of a semester is 20 weeks inclusive of semester-end examination

c. A course shall have either or all the three components. That means a course may haveonly lecture component, or only practical component or combination of any two or allthe three components.

d. The total credits earned by a student at the end of the semester upon successfully completing the course are L + T + P. The credit pattern of the course is indicated as L: T: P.

e. If a course is of 4 credits then the different credit distribution patterns in L : T : P format could be :

4 : 0 : 0,	1 : 2 : 1,	1 : 1 : 2,	1 : 0 : 3,	1 : 3 : 0,
2 : 1 : 1,	2 : 2 : 0,	2 : 0 : 2,	3 : 1 : 0,	3 : 0 : 1,
0 : 2 : 2,	0 : 4 : 0,	0 : 0 : 4,	0 : 1 : 3,	0 : 3 : 1,

f. The concerned BoS will choose the convenient credit pattern for every course based on the requirement. However, generally, a course shall be of 3 or 4 credits.

g. Different courses of study are labeled and defined as follows: **Core Course:** A course which should compulsorily be studied by a candidate as a core requirementis termed as a Core course.

a. A Core course may be a **Soft Core** if there is a choice or an option for the candidateto choose a course from a pool of courses from the main discipline /subject of studyor from a sister/related discipline / subject which supports themain discipline / subject. In contrast to the phrase Soft Core, a compulsory core course is called a **Hard Core** Course**.**

b. **Elective Course** : Generally a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline / subject of study or which provides an extended scope or which enables an exposure to some other discipline / subject/domainor nurtures the candidate's proficiency/ skill is called an Elective Course. Elective courses may be offered by the main discipline/ subject of study or bysister / related discipline / subject of study. A Soft Core course may also be considered as an elective. An elective course chosen generally from an unrelated discipline / subject, with an intention to seek exposure is called an

open elective.

c. An elective course designed to acquire a special/advanced knowledge, such as supplement study/support study to a project work, and a candidate studies such a course on his own with an advisory support by a teacher is called a **Self Study Elective**.

d. A core course offered in a discipline / subject may be treated as an elective by other discipline / subject and vice versa.

e. Project work/Dissertation work is a special course involving application of knowledge in solving / analyzing /exploring a real life situation / difficult problem.A project work up to 4 credits is called Minor Project work. A project work of 6 to 8credits is called Major Project Work. Dissertation work can be of 10-12 credits. A Project/Dissertation work may be a hard core or a soft core as decided by the BoS concerned.

4. Eligibility for M.Sc Biotechnology Admission: Candidates with Bachelor's Degree in Science including Agricultural, Pharmacy, Chemical Engineering, Medicine, Veterinary, Dairy, Fisheries, Horticulture, Forestry from any University recognized by UGC / ICAR / AICTE / Medical Council with an aggregate minimum of 55 % (50 % in case of SC/ST) or equivalent grade.

5. Scheme of Instructions:

5.1: A Masters Degree program is of 4 semesters-two year's duration. A candidate can avail a maximum of 8 semesters – 4 years (in one stretch) to complete Masters Degree (including blank semesters, if any). Whenever a candidate opts for blank semester(s) /DROP in a course or in courses or is compelled to DROP a course or courses as per the provision of the regulation, he/she has to study the prevailing courses offered by the department as per the prevailing scheme, when he/she continues his/her study.

5.2: A candidate has to earn a minimum of 76 credits, for successful completion of a Master's degree with a distribution of credits for different courses as given in the following table.

Course Type	Credits
Hard Core	A minimum of 42, but not exceeding 52
Soft Core	A minimum of 16
Open Elective	A minimum of 04

Proposed Scheme of Study (2019- 2020 Onwards)

Master's Degree Program in Biotechnology

Credits to be earned	**76**
Core papers	51 credits
Soft core	21 credits
Open elective paper*	04 credits

*Open elective shall be entirely from different discipline of study

Credit matrix for Master's Degree Program in Biotechnology

Credits to be earned	**I**	**II**	**III**	**IV**	**Total Credits**
Hard Core	14	14	14	09	51 credits
Soft Core	06	06	06	03	21 credits
Open elective	-	04	-	-	04 credits
Total	**20**	**24**	**20**	**12**	**76**

5.3 Every course including project work, practical work, field work, seminar, self study elective should be entitled as hard core or soft core or open elective by the BoS concerned

5.4A candidate can enroll for a maximum of 24 credits per semester.

5.5 Only such candidates who register for a minimum of 18 credits per semester in the first two semesters and complete successfully 76 credits in 4 successive semesters shall be considered for declaration of ranks, medals and are eligible to apply for student fellowship, scholarship, freeships and hostel facilities.

5.6 In excess to the minimum of 76 credits for masters degree in the concerned discipline / subject of study, a candidate can opt to complete a minimum of 18 extra credits to acquire **add on proficiency diploma** in that particular discipline / subject along with the masters' degree. In such of the cases wherein, a candidate opts to earn at least 4 extra credits in different discipline / subjects in addition to a minimum of 76 credits at masters level as said above then an **add on proficiency certification** will be issued to the candidate by listing the courses studiedand grades earned.

5.7A candidate admitted to Masters program can exercise an option to exit with Bachelor Honors degree / PG diploma after earning 40 credits successfully.

6. Continuous assessment, earning of credits and award of grades:

6.1 The evaluation of the candidate shall be based on continuous assessment.The Structure for evaluation is as follows: Assessment and evaluation processeshappen in a continuous mode.

However, for reporting purposes, a semester is divided into 3 discrete components identified as C1,C2, and C3.

6.2 The performance of a candidate in a course (30:70 patterns) will be assessed for a maximum of 100 marks as explained below:

6.2.1 : The first component (C_1), of assessment is for 15 marks. This will be based on test / assignment/seminar/quiz/group discussions, etc. During the first half of the semester; the first 50% of the syllabus will be completed. This shall be consolidated during the 8th week of the semester. Beyond 8th week, making changes in C_1 is not permitted.

6.2.2 : The second component (C_2), of assessment is for 15 marks. This will be based on test/ assignment/seminar/quiz/group discussions etc. The continuous assessment and scores of second half of the semester will be consolidated during the 16th week of thesemester. During the second half of the semester the remaining units in the coursewill be completed.

6.2.3 : The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) will be proposed by the teacher(s) concerned before the commencement of the semester and will be discussed and decided in the respective Departmental Council. The students should be informed about the modalities well in advance. The evaluated courses/assignments during component I (C1) and component II (C2) of assessment are immediately returned to the candidates after obtaining acknowledgement in the register maintained by the concern teacher for this purpos**e.**

6.2.4 : During the 18th - 20th week of the semester, a semester-endexamination of 3 hours duration shall be conducted for each course. This forms the third/final component of assessment (C3) and the maximum marks for the final component will be 70.

6.3 Setting question papers and evaluation of answer scripts:

6.3.1 Question papers in two sets shall be set by the internal examiner and one set by external examiner for a course. Whenever there are no sufficient internal examiners, The Chairman, BoE shall get the question papers set by external examiners. Whenever there are no external examiners, The Chairman, BoE shall get the questionpapers set by internalexaminer.

6.3.2 The Board of Examiners shall scrutinize and approve the question papers and scheme of evaluation.

1. There shall be single evaluation for all theory papers by internal examiner and 25% of the total scripts will be reviewed by an external examiner.
2. The average of first valuation and the review evaluation will be considered as the final marks of the candidate.
3. If there is difference of marks in maiden and reviewed evaluation is greater than 15 marks

then the script will go for third evaluation by the external examiner and marks awarded in the third evaluation will be final.

4. The examination for Practical work/ Field work/ Project work will beconducted jointly by one internal and one external examiner.

6.4 Challenge Evaluation:

A student who desires to apply for challenge evaluation shall obtain a Xerox copy of the answer script by paying the prescribed fee within 10days after the announcementof the results. He / She can challenge the grade awarded to him/her by surrendering the grade card and by submitting an application along with the prescribed fee to the Controller of Examinations within 15 days after the announcement of the results. This challenge evaluation is only for C3 component. The answer scripts, for which challenge evaluation is sought for, shall be sent to external examiner. The marks awarded in the challenge evaluation will be final. In case of a course with only practical component a practical examination will be conducted with two examiners (one Internal and one external) a candidate will be assessed on the basis of :

a) Knowledge of relevant processes
b) Skills and operations involved
c) Results / products including calculation and reporting.

If external examiner does not turn up then both the examiners will be internal examiners. The duration for semester-end practical examination shall be decided by the Departmental council.

7 Formula to compute Mark (M) in C3 : If **X** is the marks scored by the candidate out of 70 in C3 in theory examination, if **Y** isthe marks scored by the candidate out of 70/50/40 in C3 in Practical examination, and if **Z** is the marks scored by the candidate out of 70/50/40 in C3 for a course of (L=0):T:(P=0) type that is entirely tutorial based course, then the final marks (M) in C3 is decided as per the following table.

L.T.P distribution	Formula to computeMark (M) in C3
L:T:P	[(L+T)*X]+[(T+P)*Y] L+2T+P
L:(T=0):P	(L*X)+(P*Y) L+P
L:T:(P=0)	X
L:(T=0):(P=0)	X
(L=0):T :P	Y
(L=0): (T=0):P	Y
(L=0): T:(P=0)	Z

7.1 The details of continuous assessment (30:70 patterns) are summarized in the followingtable:

Component	Syllabus in a Course	Weightage	Period of Continuous Assessment
C1	First 50%	15%	First half of the semester (To be consolidated by 8th week)
C2	Remaining 50%	15%	Second half of the semester. (To be consolidated by16th Week)
C3	Semester – end examination (All units of the course)	70%	(To be completed during18th Week.) 20th

7.1.1 A candidate's performance from all 3 components will be in terms of scores, and the sumof all three scores will be for a maximum of 100 marks (15 +15 + 70).

7.1.2 Finally, awarding the grades should be completed latest by 24th week of the semester.

7.2 Minor/ Major Project Evaluation:

Right from the initial stage of defining the problem, the candidate has to submit the progress reports periodically and also present his/her progress in the form of seminars in additionto the regular discussion with the guide. Components of evaluation are as follows:

Component – I (C1)	Periodic Progress and Progress Reports (15%)
Component – II (C2)	Results of Work and Draft Report (15%)
Component– III (C3):	Final Viva-voce and evaluation (70%). The report evaluation is for 40% and Viva-voce examination isfor 30%.

7.3 In case a candidate secures less than 30% in C1 and C2 put together in a course, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course.

7.4 In case a candidate's class attendance in a course is less than 75%, the candidate is said to have DROPPED that course, and such a candidate is not allowed to appear for C3 in that course.

7.5 Teachers offering the courses will place the above details in the Department Council meeting during the last week of the semester, before the commencement of C3, and subsequently a notification pertaining to the above will be brought out by the Chairman of the Department before the commencement of C3 examination. A copyof this notification shall also be sent to the office of the Director & the Controller of Examinations.

7.6 In case a candidate secures less than 30% in C3, he/she may choose DROP/MAKEUP option.

7.7 In case a candidate secures more than or equal to 30% in C3, but his/her grade (G) =4, as per section 6.9 below, then he/she may be declared to have been conditionally successful in this course, provided such a benefit of conditional clearance based on G=4 shall not be availed for more than 8 credits for the entire program of Master's Degree of two years. In case a candidate secures more than 30% in C3, he/she may choose DROP/MAKE-UP option.

7.8 The candidate has to exercise his/her option immediately within 10 days from thedate of notification of results.

7.9 A MAKE UP examination for C3 shall be conducted in all the semesters. Candidates can register for the MAKE UP examination within 10 days from the date of notification of results.The MAKE UP examination will be conducted within one month of the notification of the results.

7.10 If a candidate is still unsuccessful, A MAKE UP Examination for odd semester courses will be conducted along with next regular odd semester examinations and for even semester courses along with next regular even semester examinations; however, not exceeding double the duration norm in one stretch from the date of joining the course.

7.11 A candidate has to re-register for the DROPPED course when the course is offered again by the department if it is a hard core course. The candidate may choose the same or an alternate core/elective in case the dropped course is soft core / elective course. A candidate who is said to have DROPPED project work has to re-register for the same subsequently within the stipulated period. ***The details of any dropped course will not appear in the grade card.***

7.12 The tentative / provisional grade card will be issued by the Controller of Examinations at the end of every semester indicating the courses completed successfully. This statement

will not contain the list of DROPPED courses.

7.13 Upon successful completion of Bachelors Honors/Master's Degree, a final grade card consisting of grades of all courses successfully completed by the candidate will be issued by the Controller of Examinations.

7.14 The grade and the grade point earned by the candidate in the course will be as given below.

Marks(M)	Grade	Grade Point (GP = V x G)
30-39	4	V*4
40-49	5	V*5
50-59	6	V*6
60-64	6.5	V*6.5
65-69	7	V*7
70-74	7.5	V*7.5
75-79	8	V*8
80-84	8.5	V*8.5
85-89	9	V*9
90-94	9.5	V*9.5
95-100	10	V*10

Here, **P** is the Percentage of marks (P = [(C1+C2) + M] secured by a candidate ina course which is rounded to nearest integer. **V** is the credit value of course. **G** is the Grade and **GP** is the Grade Point.

7.15 A candidate can withdraw any course within ten days from the date of notification offinal results. Whenever a candidate withdraws a paper, he/she has to register for the same course in case it is hard core course, the same course or an alternate course if it is soft core/open elective.

7.16 A DROPPED course is automatically considered as a course withdrawn.

7.17 Overall Cumulative Grade Point Average (CGPA) of a candidate after successfully completing the required number of credits (76) is given by:

CGPA = ΣGP / Total Number of Credits

8. Classification of results:

The final grade point (FGP) to be awarded to the student is based on CGPA secured by the candidate and is given as follows

CGPA	FGP	
	NUMERICAL INDEX	QUAITATIVE INDEX
4≤ CGPA<5	5	
5≤ CGPA<6	6	SECOND CLASS
6≤ CGPA<7	7	
7≤ CGPA<8	8	FIRST CLASS
8≤ CGPA<0	9	
9≤ CGPA≤ 10	10	DISTINCTION

Overall percentage=10*CGPA or is said to be 50% in case CGPA<5

9. Medium of instruction:

The medium of instruction shall be English. However, a candidate will be permitted to write the examinations either in English or in Kannada. This rule is not applicable to languages.

10. Provision for appeal:

If a candidate is not satisfied with the evaluation of C_1 and C_2 components, he / she can approach the grievance cell with the written submission together with all facts, the assignments, test papers etc, which were evaluated. He/she can do so before the commencement of semester-end examination. The grievance cell is empowered to revise themarks if the case is genuine and is also empowered to levy penalty as prescribed by the university on the candidate if his/her submission is found to be baseless and unduly motivated. This cell may recommend taking disciplinary/corrective action on an evaluator if he/she is found guilty. The decision taken by the grievance cell is final. For every program there will be one grievance cell. The composition of the grievancecell is as follows**.**

a. The Controller of examinations-ex-officio Chairman / Convener
b. One senior faculty member (other than those concerned with the evaluation of the course concerned) drawn from the department/discipline and/or from the sister departments/sisterdisciplines.
c. One senior faculty members/course experts drawn from outside the University department

M.Sc. BIOTECHNOLOGY PROGRAM

Choice Based Credit System (CBCS)

Syllabus 2024

Credit matrix for M.Sc. Biotechnology

Master's Degree Program in Biotechnology

Credits to be earned	**76 credits**
Hard Core Papers	51 credits
Soft Core Papers	21 credits
Open elective paper*	04 credits

**Open elective shall be entirely from different discipline of study*

Credit matrix for Master's Degree Program in Biotechnology

Credits to be earned	**I**	**II**	**III**	**IV**	**Total Credits**
Hard Core	17	13	13	08	51 credits
Soft Core	06	06	09	-	21 credits
Open elective	-	04	-	-	04 credits
Total	**23**	**23**	**22**	**08**	**76 credits**

I Semester

Sl.. .No.	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	Molecular Cell Biology	FCHC	3	1	0	4
2	Fundamentals of Biochemistry	FCHC	3	1	0	4
3	Techniques in Biology	FCHC	3	1	0	4
4	**Practical- I** (Molecular Cell Biology, Fundamentals of Biochemistry, Techniques in Biology and Genetics/ Microbiology/Food and Environmental Biotechnology)	HC	0	0	5	5
Soft Core (Any TWO)						
1	Genetics	FCSC	3	0	0	3
2	Microbiology	FCSC	3	0	0	3
3	Food and Environmental Biotechnology	SC	3	0	0	3
TOTAL CREDITS 4 Hard Cores (3 theories + 1 practical) :17credits, 2 Soft Cores: 06 credits						**23 CREDITS**

II Semester

Sl. No.	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	Molecular Biology	FCHC	3	1	0	4
2	Genetic Engineering	FCHC	3	1	0	4
3	**Practical II** (Molecular Biology, Genetic Engineering and Molecular Diagnostics/Molecular Plant Pathology /Bioprocess Technology)	HC	0	0	5	5
	Soft Core (Any TWO)					
1	Molecular Diagnostics	FCSC	3	0	0	3
2	Molecular Plant Pathology	SC	3	0	0	3
3	Bioprocess Technology	SC	3	0	0	3
	Open Elective					
1	**OPEN ELECTIVE** (Choose from other department)	OE				4
	Open Elective (For other discipline students)					
1	Biotechnology for human well being	OE	4	0	0	4
	TOTAL CREDITS **3 Hard Cores (2 theories + 1 practical) :13credits, 2 Soft Cores: 06 credits + 1 Open Elective : 04 credits**					**23 CREDITS**

III Semester

Sl. .No.	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	Plant Biotechnology	HC	3	1	0	4
2	Immunology	FCHC	3	1	0	4
3	**Practical-III** (Plant Biotechnology, Immunology and Animal Biotechnology/ Natural Products & Drug Discovery/ Genomics & Proteomics)	HC	0	0	5	5
Soft Core (Any THREE)						
1	Animal Biotechnology	SC	3	0	0	3
2	Natural products & Drug discovery	SC	3	0	0	3
3	Biostatistics & Bioinformatics	SC	3	0	0	3
4	Genomics & Proteomics	SC	3	0	0	3
TOTAL CREDITS 3 Hard Cores (2 theories + 1 practical) :13 credits, 3 Soft Cores: 09 credits						**22 CREDITS**

IV Semester

Sl.. No.	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	Project Work	HC	0	2	6	08
TOTAL CREDITS 1 Hard Core :08 credits						**08 CREDITS**

I Semester

Sl.. .No.	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	Molecular Cell Biology	FCHC	3	1	0	4
2	Fundamentals of Biochemistry	FCHC	3	1	0	4
3	Techniques in Biology	FCHC	3	1	0	4
4	**Practical- I** (Molecular Cell Biology, Fundamentals of Biochemistry, Techniques in Biology and Genetics/ Microbiology/Food and Environmental Biotechnology)	HC	0	0	5	5
Soft Core (Any TWO)						
1	Genetics	FCSC	3	0	0	3
2	Microbiology	FCSC	3	0	0	3
3	Food and Environmental Biotechnology	SC	3	0	0	3
TOTAL CREDITS 4 Hard Cores (3 theories + 1 practical) :17credits, 2 Soft Cores: 06 credits						**23 CREDITS**

MOLECULAR CELL BIOLOGY (FCHC)

4 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The structures and purposes of basic components of prokaryotic and eukaryotic cells,especially macromolecules, membranes, and organelles.
2. Cell cycle and cellular processes.
3. Concept of cancer biology and signal transduction.
4. Phytochemicals in cancer treatment and stems cells.

Module- I: Organization of the cell **12 Hours**

Universal features of cells, Ultra-structure of prokaryotic and eukaryotic cells (Plants and animals), Structure of plant cell wall, Structure of cell membrane and models, functions of cell membrane, Intracellular organelles: Structure and functions of Ribosomes, Golgi apparatus; Mitochondria, Chloroplast, Lysosomes, Centrosome, Endoplasmic reticulum, Nucleus-Internal organization, Chromatin- structure and function, cellular cytoskeleton.

Module – II: Cellular processes **12 Hours**

Cell cycle and its regulation, Cell cycle check points, Molecular dynamics of cell division, interphase, Mitosis and meiosis, Cyclins and CDKs, Cell differentiation: Stem cells, Differentiation of stem cells into different cell types and organization into specialized tissues, apoptosis, necrosis & autophagy, Molecular mechanisms of membrane transport active, passive and facilitated, Receptor mediated endocytosis.

Module – III: Cancer Biology **12 Hours**

Introduction, Historical account, classification, Characteristics of cancer cells, hallmark features of cancer cells, Carcinogenesis, Exogenous and endogenous carcinogens, cancer initiation, promotion and progression, Cancer cell cycle, Virusesand cancer, Oncogenes, Tumor suppressor genes with examples, cancer therapy present and future, Role of p53 in cancer. Role of phytochemicals in cancer treatment, cancer stem cells.

Module – IV Basics of Signal Transduction **12 Hours**

Extra-cellular matrix components, Cell junctions, Cell adhesion molecules, Hormones and their receptors, Cell surface receptors as reception of extra- cellular signals, Types of cell signaling growth factors- EGFR, VEGF, PDGF and their Signalling, Signalling through G-protein coupled receptors; Second messengers in signal transduction pathways: cAMP and calcium ions (Ca2+), Signalling through Receptor tyrosine kinases ,MAP kinase pathway,P13K -Akt pathway.

References:

1. Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., and Walter, P. 2008. MolecularBiology of the Cell. (5th Ed.) New York: Garland Science.
2. Cooper, G. M., and Hausman, R. E. 2013. The Cell: a Molecular Approach (6th Ed.).Washington: ASM, Sunderland.
3. Hardin, J., Bertoni, G., Kleinsmith, L. J., and Becker, W. M. 2012. Becker's World of theCell. Boston (8th Ed.). Benjamin Cummings.
4. Kleinsmith, L.J., and Kish, V. M. 1995. Principles of Cell and Molecular Biology (2ndEd.) Harper Collins College Publishers, New York, USA.
5. Lodish H., and Berk A. 2016. Molecular Cell Biology (8th Ed.). New York. W H Freeman.
6. **E-books**

- https://cdn.preterhuman.net/texts/science_and_technology/nature_a nd_biology/Cell and_ Molecular_Biology/Molecular%20Cell%20Biology%205th%20 ed%20- %20Lodish%20et%20al.pdf.
- http://standring.weebly.com/uploads/2/3/3/5/23356120/8_- _unit_30c.pdf.
- file:///C:/Users/Dr.%20Divya/Downloads/Cancer%20Biology%204 th%20ed%20- %20R.%20Ruddon%20(%20PDFDrive%20).pdf

7. **Web links:**

- https://www.slideshare.net/musselburghgrammar/cell- molecular-biology
- https://www.slideshare.net/TapeshwarYadav1/basics-of- molecular-biology-56429099
- https://slideplayer.com/slide/12568274/

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's) WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER I												
Course Name : MOLECULAR CELL BIOLOGY (FCHC)												
PO / CO	**PO-1**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1	2	2	2	3	2	3	3	3	3	3	3	3
CO2	2	2	2	3	2	3	2	2	2	2	3	3
CO3	2	2	2	3	2	3	2	2	2	2	3	3
CO4	2	2	2	3	2	3	2	2	2	2	3	3
Weighted Average	**2**	**2**	**2**	**3**	**2**	**3**	**2.25**	**2.25**	**2.25**	**2.25**	**3**	**3**

4 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The basics of biomolecules.
2. Functions of biomolecules in the biological system.
3. Interactions among the biomolecules in the nature.
4. The fundamental principles in sequencing of DNA.

Module 1: Basics of Chemical Bonding and Carbohydrates **12 Hours**

Bonding: Covalent bond; coordinate bond; coordinate bond formation in transition metals. Bonding of iron in hemoglobin and cytochromes, cobalt in Vit B12, magnesium in chlorophyll. Special properties of water; Structure and bonding, non- covalent interactions.

Carbohydrates: properties and reactions of carbohydrates, structure and classification of carbohydrates, monosaccharides (pentoses, hexoses), disaccharides (lactose, sucrose, maltose) and polysaccharides (starch, cellulose, glycogen and bacterial cell wall polysaccharides).

Module 2: Basics of Amino Acids and Proteins **12 Hours**

Amino acids: Nomenclature, classification and buffering properties, zwitterionic structure, reactions of Amino acids.

Proteins: Primary, secondary, tertiary and quaternary structures, protein sequencing. Factors responsible for protein folding: Non-covalent interactions and S-S bridges in stabilizing the proteins, Denaturation and renaturation of proteins - Anfinsen's experiment, molten globule & chaperones.

Module 3: Basics of Lipids & Enzymology **12 Hours**

Lipids: Classification & reaction of lipids; oils, fats, and waxes. Occurrence and properties of fatty acids, esters of fatty acids, cholesterol, phospholipids, glycolipids, sphingolipids, cerebrosides and gangliosides, Role in cell membrane.

Enzymology: Classification, enzyme activity, Michaelis-Menten kinetics, LB plot, inhibition - competitive, uncompetitive, non-competitive, determination of Ki, active site, allosterism - ATCase, isoenzymes- LDH, catalytic strategies, co-enzymes and cofactors, multienzyme complexes- PDC.

Module 4: Basics of Nucleic Acids **12 Hours**

Nucleic Acids: DNA as genetic material, Griffith, Avery & Macleod experiments, isolation of DNA & RNA from biological sources, secondary structure of DNA, Watson & Crick model, Chargaff's rule; B and Z DNA. Features of mitochondrial, chloroplast DNA and plasmids. Secondary structure of tRNA and clover leaf model. Physiochemical properties of nucleic acids, melting of DNA, T_m, factors affecting T_m, Cot curve, classification of DNA based on Cot curve.

References:

1. Bahl, A. 2010. Advanced organic chemistry. S Chand & Company Limited.
2. Berg, J. M., Tymoczko, J. L., andStryer, L. 2006. Biochemistry: Internationaledition. W HFreeman & Company Limited.
3. Berg, J. M.,Tymoczko, J. L, andStryer, L. 2002. Biochemistry (5th Ed.). W HFreeman.
4. Mathews, P. 2002. Advanced chemistry. Cambridge low price editions. Cambridge University Press, UK.
5. Morrison, R., and Boyd, R. 1992. Organic Chemistry (6th Ed.). Englewood Cliffs,NJ:Prentice Hall.
6. Nelson, D. L., Lehninger, A. L., and Cox, M. M. 2008. Lehninger principlesofbiochemistry. New York : W.H. Freeman.
7. Voet, D., and Voet, J. G.2010. Biochemistry,(4^{th}Ed.) New York: J. Wiley & Sons
8. **Videos for the concept:**

- www.khanacademy.org – Chemical Bonding, Chemistry of Biomolecules
- www.yourgenome.org – Structure of DNA

9. **Weblink:**

- https://www.slideshare.net/AshfaqAhmad52/introduction-to-biochemistry- 67924875
- https://slideplayer.com/slide/25287.

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's) WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER I												
Course Name: FUNDAMENTALS OF BIOCHEMISTRY (FCHC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	2	2	2	2	2	2	2	2	2	3	3
CO2	3	2	2	2	2	2	2	3	2	2	3	3
CO3	3	2	2	2	2	2	2	2	3	3	3	3
CO4	3	2	2	2	2	2	2	2	3	3	3	3
Weighted Average	3	2	2	2	2	2	2	2.25	2.5	2.5	3	3

TECHNIQUES IN BIOLOGY (FCHC)

4 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. This paper is designed to give a brief introduction to most of the techniques usedin the field of biological analyses.
2. Nevertheless, the topics in this paper are to be taught compendiously.
3. The fundamental principles in cell homogenization.
4. Importance of bioanalytical techniques.

Module I: Biological samples: Types and preparation **12hours**

Study Models: *In vivo* and *in vitro* models; Microbial, Animal, Plants; choice of models;types ofstudies, auxotrophs. Routes of exposure of test chemicals in animals. Culture: microbes, animaland plant cells in laboratory.

Cell fractionation techniques: Tissue homogenization, Cell lysis techniques, extraction of cellcellularcontents. Protein purification techniques: salting in, salting out, dialysis and ultrafiltration.

Centrifugation: Svedberg's constant, sedimentation velocity and sedimentation equilibrium.

Ultra centrifugation: Differential and density gradient centrifugation, centrifugal elutriation, isolation of cell organelles (e.g. Mitochondria) from biological tissue samples.

Module II: Spectroscopic analysis **12Hours**

Principles and applications of colorimeter, spectrophotometer, fluorimeter, multiwell plate reader. Beer-Lambert's Law and its limitations. Extinction coefficient, chromogenic and fluorescent probes, their applications. Principle of flame photometry, and X-ray crystallography, IR, ESR, NMR& Raman's spectroscopy.

Module III: Chromatographic and electrophoretic techniques: 12Hours

Chromatography: Principles, working and applications of paper chromatography (radial, ascending, descending and 2-D), Thin layer chromatography, Brief introduction, application of Adsorption, Ion exchange, Gel filtration, Affinity, Gas chromatography. Chromatofocusing, HPLC, UPLC and FPLC.

Protein electrophoresis: Polyacrylamide gel electrophoresis, SDS-PAGE, IEF & 2DEF.Visualizing proteins using CBB, silver stain, glycoproteins and lipoproteins staining, Brief introduction to Zymogram and reverse zymogram;

Nucleic acid electrophoresis: Agarose gel electrophoresis, Visualizing nucleic acids in using Ethidium bromide and UV. Fluorescence probes: SYBR green and Eeva green, Taq man, PFGE and capillary electrophoresis.

Module IV: Radiochemistry and Mass spectroscopy **12Hours**

Isotopes: Heavy isotopes and radio isotopes, half-life, decay constant, detection and quantification principle and working of GM counter and scintillation counter (solid/liquid).

Mass spectroscopy Principle and construction of mass spectrometer. m/e, tof,MALDI and

ESI. LC-MS, LC-MS-MS.

Applications of radioactivity: Radio isotopes in biology 3H, 14C, 32P, 131I,35S; Labeling of proteins and nucleic acids, autoradiography, pulse chase method, carbon dating.

References:

1. Bryce, C. and Balasubramanian, D.2004. Concepts in Biotechnology: UniversitiesPress.
2. Crueger, W. and Crueger, A. 2017. Biotechnology:a textbook of microbiology.Medtech.
3. Marshall, A. G.1978. Biophysical chemistry: principles,techniques, andapplications: Wiley New York.
4. Micklos, D. A., andFreyer, G. A. 1990. DNA science; a first course in recombinant DNA technology: Cold Spring Harbor Laboratory Press.
5. Purohit, S., and Mathur, S.1999. Drugs in Biotechnology fundamentals and applications. Purohit SS.,Ed.,Maximum Publishers, India.
6. Slater,A.., Scott, N., and Fowler, M. 2003. Plant Biotechnology: The Genetic Manipulation of Plants. Oxford University Press, Oxford, New York,
7. Walker, M., and Rapley, R. 2009. Route maps in gene technology. John Wiley &Sons.
8. Wilson, K., and Walker, J. 2010. Principles and techniques of biochemistry andmolecular biology. Cambridge University Press.
9. **Weblink:**

- https://www.slideshare.net/mprasadnaidu/molecular- biology-tecniques.
- https://www.slideshare.net/MeenalAggarwal2/chromatog raphic-techniques.
- https://www.slideshare.net/JayashreeShanmugam14/cell- fractionation- 115544348.

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER I												
Course Name : TECHNIQUES IN BIOLOGY (FCHC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	2	3	2	3	2	2	2	2	3	3
CO2	3	3	2	3	2	3	2	2	2	2	3	3
CO3	3	3	2	3	2	3	2	2	2	2	3	3
CO4	3	3	2	3	2	3	2	2	2	2	3	3
Weighted Average	3	3	2	3	2	3	2	2	2	2	3	3

PRACTICAL- I (HC)

(Molecular Cell Biology, Fundamentals of Biochemistry, Techniques in Biology and Genetics / Microbiology/Food and Environmental Biotechnology)

5 credits **160 Hours**

Course Outcome: Students should study this paper to know

1. Understanding the cell organelle, chromosome structure and mutation analysis.
2. Methodology applied to prepare buffers and solutions.
3. Hands on training in chromatographic techniques.
4. Isolation, enumeration and biochemical characterization of microbes.
5. Functional foods and environmental protection.

Molecular Cell Biology, Fundamentals of Biochemistry, Techniques in Biology

1. Isolation of mitochondria by differential centrifugation.
2. Measurement of cell dimension by micrometery.
3. Cell Counting and viability by tryphan blue exclusion method.
4. Study of mitosis in onion root tips.
5. Study of meiosis in onion flower buds.
6. Preparation buffers and solutions &Measurement of pH.
7. Estimation of reducing sugar by DNS method.
8. Estimation of proteins by Lowry'method.
9. Estimation of amino acids by Ninhydrin method.
10. Estimation of saponification and iodine value of lipids.
11. Ascending, descending and circular paper chromatography for separation of amino acids.
12. TLC of amino acids.
13. Column chromatography- gel filtration.
14. Gel electrophoresis- native and SDS-PAGE and estimation of molecular weightof proteins.
15. Wavelength scans of proteins and nucleic acids.

Genetics (Applicable only for the students who have selected this paper as soft core)

16. Replica plating technique for transfer of bacterial colonies.
17. Ultra-violet killing curve and determination of mutant types in *Saccharomyces cerevisiae*.
18. Determination of chiasma frequency in onion.
19. Study of Mutations in *Drosophila*.
20. Study of Autosomal and sex linked gene inheritance in *Drosophila*.

Microbiology (Applicable only for the students who have selected this paper as soft core)

21. Preparation of liquid and solid media for growth of microorganisms.
22. Isolation of pure cultures from soil and water.
23. Effect of temperature, pH, carbon and nitrogen sources on microbial growth.
24. Microscopic examination of bacteria, yeast and molds & study of organisms by

25. Gramstain, acid fast stain and staining for spores.
26. Biochemical characterization of selected microbes -IMVIC

Food and Environmental Biotechnology (Applicable only for the students who have selected this paper as soft core)

27. Determination of Biological oxygen demand (BOD) of water samples.
28. Determination of Chemical oxygen demand (COD) of water samples.
29. Determination of Total dissolved solids (TDS) of water samples.
30. Determination of quality of milk samples by methylene blue reductase test.
31. Production of sauerkraut.

References:

1. Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., and Walter, P. 2008. Molecular Biology of the Cell. (5th Ed.) New York: Garland Science.
2. Wilson, K., and Walker, J. 2010. Principles and techniques of biochemistry andmolecularbiology. Cambridge University Press.
3. Mathews, P. 2002. Advanced chemistry.Cambridge low price editions.Cambridge University Press, UK.
4. Brooker, R.J. 2005. Genetics –analysis and principles. Addison Wesley LongmanInc.,California.
5. Tamarin, R. H. 2009. Principles of Genetics (7th Ed.) Tata-McGraw Hill, New Delhi.
6. Parker, N, Schneegurt, M., ThiTu, A. H, Forster B. M., Lister P. 2017.Microbiology.Openstrax.
7. **E-books**

• https://cdn.preterhuman.net/texts/science_and_technology/nature_a nd_biology/Cell

• www.yourgenome.org – Structure of DNA

8. **Web links:**

• https://www.slideshare.net/musselburghgrammar/cell- molecular-biology
• https://www.slideshare.net/TapeshwarYadav1/bas ics-of-molecular-biology- 56429099
• https://slideplayer.com/slide/12568274.
• https://www.youtube.com/watch?v=TfBnfxm0Xyc
• https://www.youtube.com/watch?v=he260FUU5_M
• https://www.youtube.com/watch?v=BlnUNmfGn7I
• https://www.youtube.com/watch?v=o4yJF90OR9M
• https://www.youtube.com/watch?v=_cJfsWYR42M

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (PO I – PO XII

SEMESTER I												
Course Name : PRACTICAL- I (HC) (Molecular Cell Biology, Fundamentals of Biochemistry, Techniques in Biology and Genetics/ Microbiology/Food and Environmental Biotechnology)												
PO / CO	**PO- 1**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

GENETICS (FCSC)

3 Credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The development of Genetics and the principles of Mendel.
2. The concepts of Viral, Bacterial, Fungal & Algal genetics.
3. Mutation and Mutagenesis.
4. Detailed account on transposable elements and transpositions.

Module- I 12 Hours

History and developments of genetics. Principle of Genetic Transmission: Mendel's' Experiments, Symbols and terminology, Principle of dominance and segregation, Principle of independent assortment, Mendelian inheritance and probability (Multiplication and Addition rites). Extensions of Mendelian Principles:co- dominance, incomplete dominance, gene interactions, multiple alleles, lethal alleles, pleiotropy, penetrance and expressivity, polygenic inheritance, linkage and crossing over, sex linked inheritance, sex limited and influenced traits, genome imprinting, extra nuclear inheritance.

Module- II 12 Hours

Viral Genetics: Lytic and Lysogenic cycles, Phage Phenotypes, Phenotypic Mixing, Recombination and Mapping. **Bacterial Genetics:** Bacterial Transformation- Typesof transformation mechanisms found in prokaryotes, Bacterial Conjugation- properties of the F plasmid, F^+ x F^- mating, F' x F^- conjugation, Hfr conjugation. **Fungal Genetics:***Neurospora*- Tetrad analysis and linkage detection - 2 point and 3 point crosses, chromatid and chiasma interference, Mitotic recombination in *Neurospora*. **Algal Genetics:** *Chlamydomonas*- unordered tetrad analysis - Recombination and Mapping.Floral meristems and floral development in *Arabidopsis,* ABC model.

Module- III 12 Hours

Mutation and mutagenesis: Nature, type and effects of mutations. Mutagenesis – physical and chemical mutagens, base and nucleoside analog, alkylating agents, interrelating agents, ionizing radiation. Induction and detection of mutation in microorganisms and *Drosophila*. Site directed mutagenesis and its applications.

Recombination: Homologous and non-homologous recombination, Holliday model, site-specific recombination.

DNA Repair: Mechanism of genetic repair- direct repair, photoreactivation, excision repair, mismatch repair, post-replicative recombination repair, Repair of double- strand breaks,SOS repair.

Module- IV **12 Hours**

Sex Determination-Sex chromosomes, Chromosomal and genetic basis of sex determination. Sex determination in *C.elegans*, *Drosophila*, human and Plant(*Melandrium*). Dosage compensation- Genic balance, Gene dose, Molecularbasis of dosage compensation in Drosophila and man.

Transposable elements- discovery in maize and bacteria, transposal elements in bacteria and bacteriophage, types and functions; Transposable elements in eukaryotes- Plants, *Drosophila* and Humans, mechanisms of transpositions.

References:

1. Alberts, B., Bray, D., Lewis, J., Raff, M., Robert, K.., and Watson, J. D.1999.Molecularbiology of the cell. Garland Pub. Inc. New York.
2. Alberts, B., Johnson, A., Lewis, J., Rafi, M., Roberts, K., and Walter, P. 2008. Molecular biology of the cell (5th Ed.), Garland science. Taylor & Francis Group, NewYork, USA.
3. Atherly, A.G.,Girton, J. R., and Donald, J.R. 1999. The Science of Genetics.SaundersCollege Publishing, Fort Worth. Texas.
4. Brooker, R.J. 2005. Genetics –analysis and principles. Addison Wesley Longman Inc.California.
5. Brown, T.A. 2000. Genetics: a molecular approach. Van NostrandReinhold (intn)Co., Ltd.,London.
6. Buchanan, B.B., Gruissem, W., and Jones, R.L. 2010. Biochemistry and MolecularBiologyof Plants. Ed. ASPP Press.USA.
7. Fairbanks, D.J., and Anderson, W.R. 1999. Genetics the continuity of Life.Brooks's/ColePub. California.
8. Griffith, A.J.F.,Gelbart, W.M., Muller, J. H., and Lewintin, R. C. 1999. ModernGeneticAnalysis. W.H. Freeman and Co. New York.
9. Hartl, D. 1991. Basic Genetics (2nd Ed.). Jones and Barlett Publisher Inc. Boston.
10. Kleinsmith, L.J., and Kish, V.M. 1995. Principles of Cell and Molecular Biology(2nd Ed.).Harper Collins College Publisher, New York, USA.
11. Lodish, H., Berk, A., Zipurasky, S. L., Matsudaira, P., Baltimore, D., and Darnell, J.2000.Molecular Cell Biology (4th Ed.). W.H. Freeman and Co. New York, USA.
12. Randhawa, S. S. 2017. Textbook of Genetics (Ist Ed.).S Vikas and Company,Jalandhar.
13. Snustad, D.P., Simmons, M. J., and Jenkins, J. R. 1997. Principles of Genetics.HohnWiley&son'sInc, New York.
14. Strickberger andMonroe W. 2000. Evolution (3rd Ed.). Jones & Bartlett Publisher, Inc. USA.

15. Tamarin, R. H. 2009. Principles of Genetics (7th Ed.) Tata-McGraw Hill, New Delhi. 16.Watson, J. D., Baker, T. A., Bell, S. P., Gann, A., Levine M., and Losick, R. 2004.

16. Molecular Biologyof the Gene (5th Ed.). Pearson Education Pt. Ltd., New Delhi, India

17. Web links

- https://www.youtube.com/watch?v=L42IwtPC7eM
- https://www.youtube.com/watch?v=3VrGkCm4sT4
- https://www.youtube.com/watch?v=l-9iUpFGbxE
- https://www.youtube.com/watch?v=pdEgBMXJdeg
- https://www.youtube.com/watch?v=VIS_4G3Ysyk

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER I												
Course Name : GENETICS (FCSC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	2	3	2	3	3	3	2	3	2	3
CO2	3	3	2	3	2	3	3	3	2	3	2	3
CO3	3	3	2	3	2	3	3	3	2	3	2	3
CO4	3	3	2	3	2	3	3	3	2	3	2	3
Weighted Average	**3**	**3**	**2**	**2**	**2**	**3**	**3**	**3**	**2**	**3**	**2**	**3**

MICROBIOLOGY (FCSC)

3 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The characteristics of microbes, their taxonomy and diversity.
2. The growth of microbes and their control.
3. The relationship between microbes and environment.
4. The beneficial and harmful effects of microorganisms.

Module I **12 Hours**

The beginning of microbiology and Microbial Characteristics

Introduction to Microbiology and Microbes; History and scope of Microbiology – Hook,Antony van Leeuwenhoek and Cohn; Contribution of Pasteur and Koch. Prokaryotic cell structure, pure culture techniques; bacterial genetics: transformation, transduction and conjugation; antimicrobial resistance.Culture collection and Maintenance of cultures.

Module II **12 Hours**

Microbial Taxonomy and Microbial diversity

Criteria for classification of bacteria; Bergy's manual, Cyanobacteria, acetic acid bacteria, lactic acid bacteria and Mycobacteria .Archaea: Halophiles, Methanogens and thermophiles. Viruses: general properties of virus, viral structure, sub-viral particles – viroids and prions. Eukarya: algae and fungi, general characteristics and outline classification.

Module III **12 Hours**

Microbial Growth and Control

Microbial growth: Growth curve, batch and continuous culture systemculture, factorsaffecting growth like temperature, acidity, alkalinity. Sterilization, disinfection andantisepsis: physical and chemical methods for controlof microorganisms, antibiotics, Microbes and environment: Nutrient cycles (carbon and nitrogen cycle); microbial communication system; quorumsensing, prebiotics and probiotics.

Module IV **12 Hours**

Beneficial and Harmful effects of Microorganism

Beneficial aspects of microbes and their metabolites in food industry, Bioremediation. Important microbial diseases of Plants caused by fungi, bacteria and viruses. Important infectious diseases of humans, caused by bacteria, protozoa and viruses - tuberculosis, malaria and AIDS. Emerging and resurgent infectious diseases, SARS- COV 2 structure and virulence of virus. Host-Microbe interaction (pathogen interaction, microbiome analysis method.)

References:

1. Matthai, W., Berg, C. Y., and Black, J. G. 2005. Microbiology, Principles and Explorations. Boston, MA: John Wiley & Sons.
2. Parker, N, Schneegurt, M., ThiTu, A. H, Forster B. M., Lister P. 2017.Microbiology.Openstrax
3. Pelczar, M. J., et al., 2001. Microbiology (5th Ed.). New York: McGraw-Hill.
4. Rekadwad, B, 2020. Microbial Systematics , Taxonomy, Microbial Ecology,Diversity.CRC Press.
5. Willey, J. M., Sherwood, L., Woolverton, C. J., Prescott, L. M., and Willey, J. M.2011.Prescott's Microbiology. WilleyNew York, McGraw-Hill.
6. **Weblink:**

- https://www.slideshare.net/sarah_jumali/1-introduction-to- microbiology
- https://www.austincc.edu/cbeaman/micro%20ppt/chp%201%20co mbined.ppt

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER I												
Course Name : MICROBIOLOGY (FCSC)												
PO / CO	PO-I	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	2	3	2	3	3	3	2	3	2	3
CO2	3	3	2	3	2	3	3	3	2	3	2	3
CO3	3	3	2	3	2	3	3	3	2	3	2	3
CO4	3	3	2	3	2	3	3	3	2	3	2	3
Weighted Average	**3**	**3**	**2**	**2**	**2**	**3**	**3**	**3**	**2**	**3**	**2**	**3**

FOOD AND ENVIRONMENTAL BIOTECHNOLOGY (SC)

3 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The knowledge about fermentation and fermented products and nutrition.
2. The functional foods and genetically modified foods.
3. The detailed account of Environment and bioremediation of pollutants.
4. The knowledge of phytoremediation.

Module-I 12 Hours

Introduction to Food biotechnology: Fermented foods, milk-based products, fermented vegetables, fermented meats, fish, beverages, vinegar, mould fermentation - tempeh, soy sauce, rice wine. Enzymatic processing of fruit juices; DNA-based methods for food authentication, comparative methods of toxicity testing in (novel) foods, application of generic technologies in food and nutritional sciences; anti-cancercomponents in foods.

Module-II 12 Hours

Functional foods and Biotechnology: Biochemical processing in the improvement of functional foods with targeted health benefits and increased nutrient value; Pre- and Pro-biotics, single cell protein, single cell lipids. Manipulation of fruit ripening process. Food processing, principles and practices, food ingredients and processing aids from biotechnological processes, corn sweeteners, bacterial starter cultures, cold- adapted enzymes. Food spoilage, preservation, mycotoxins in food commodities. Genetically modified foods, designer foods, detection of GM foods, Nutraceuticals, Concept of food parks.

Module-III 12 Hours

Introduction to Environment, Renewable and non-renewable resources, current status of biotechnology in environment protection. Waste water management: Bioreactors for waste-water treatment, treatment of industrial effluents-dairy, distillery, paper and sugar industries. Membrane- based waste water treatment. Biotechnology & Environment, Biodiversity and its conservation, Microbial ecology.

Module-IV 12 Hours

Bioremediation: Concepts and principles, bioremediation using microbes, in situ and ex situ bioremediation, biosorption and bioaccumulation of heavy metals. Phytoremediation Xenobiotics: Degradation capabilities of microorganisms with reference to toxicology, pesticides, herbicides, polyaromatic hydrocarbons.

References:

1. Bagchi, D., Ghosh, D, K., Lau, F. C. 2010. Biotechnology in Functional Foods andNutraceuticals (1st Ed.).CRC Press.
2. Das, S. 2014. Microbial Biodegradation and Bioremediation (1st Ed.). Elsevier.
3. Johnson-Green, P. 2018.Introduction to Food Biotechnology(1stEd.).CRC Press.
4. Prasad, M. N. V., and Hasanuzzaman, M. 2020. Handbook of BioremediationPhysiological, Molecular and Biotechnological Interventions, (1st Ed) Elsevier.
5. Sati, V. P. 2012.An Introduction to Environment, Rawat.
6. Weblink:

- https://www.slideshare.net/HumairSindhi/applications-of- environmental-biotechnology- by-hameer-khan
- https://www.slideshare.net/IMANELADRAA/food-biotechnology- 91606605.

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER I												
Course Name : FOOD AND ENVIRONMENTAL BIOTECHNOLOGY (SC)												
PO / **CO**	**PO-I**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VIII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-X1**	**PO-XII**
CO1	3	3	2	3	2	3	3	3	2	3	2	3
CO2	3	3	2	3	2	3	3	3	2	3	2	3
CO3	3	3	2	3	2	3	3	3	2	3	2	3
CO4	3	3	2	3	2	3	3	3	2	3	2	3
Weighted Average	**3**	**3**	**2**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	**2**	**3**

II Semester

Sl. No.	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	Molecular Biology	FCHC	3	1	0	4
2	Genetic Engineering	FCHC	3	1	0	4
3	**Practical II** (Molecular Biology, Genetic Engineering and Molecular Diagnostics/Molecular Plant Pathology /Bioprocess Technology)	HC	0	0	5	5
	Soft Core (Any TWO)					
1	Molecular Diagnostics	FCSC	3	0	0	3
2	Molecular Plant Pathology	SC	3	0	0	3
3	Bioprocess Technology	SC	3	0	0	3
	Open Elective					
1	**OPEN ELECTIVE** (Choose from other department)	OE				4
	Open Elective (For other discipline students)					
1	Biotechnology for human well being	OE	4	0	0	4
	TOTAL CREDITS **3 Hard Cores (2 theories + 1 practical) :13credits, 2 Soft Cores: 06 credits + 1 Open Elective : 04 credits**					**23 CREDITS**

M

MOLECULAR BIOLOGY(FCHC)
4 Credits 48 Hours

Course outcome: Students should study this paper to know

1. To understand biological activities and metabolism at DNA and protein level
2. The course gives an in-depth insight into the molecular aspects of life - the central dogma.
3. It explains molecular aspects of genes and its regulation- genome- gene expressions heredity- recombination- protein synthesis- molecular basis of diseases- mutations genetic analysis etc.
4. Understand the molecular tools and its application in basic research and applied research in various fields of life sciences.

Module 1: 12 Hours

Genome organization: Prokaryotic and eukaryotic genome organization, central dogma, structural organization of chromosome, structure and functions of DNA & RNA, Biochemical evidences for DNA as genetic material.

DNA: Chemistry of DNA, Forces stabilizing DNA structure, Physical Properties of Ds DNA (UV absorption spectra Denaturation and renaturation), chemical that react with DNA, Interaction with small ions, DNA binding motifs.

Module 2 12 Hours

DNA topology: Supercoiled form of DNA, Biology of supercoiled DNA, DNA topoisomerases, effect of supercoiling on structure of DNA and role of supercoiling in gene expression and DNA replication. **DNA Replication:** Characteristics and functions of bacterial DNA polymerases I, Mechanism of prokaryotic DNA replication :Fidelity of replication, Eukaryotic DNA polymerases and mechanism of replication. Replication of viral DNA, DNA replication in telomeric regions, Telomerases, mechanisms of action of topoisomerase I and II Models of DNA replication, Inhibitors of replication.

Module 3: **12 Hours**

Transcription: Characteristics and function of bacterial RNA polymerases Eukaryotic RNA polymerases, mechanism of transcription and regulation. transcription factors, Stringent response. Post transcriptional modifications of mRNA mechanism of splicing, Processing of tRNA and rRNA. Inhibitors of transcription. Mechanism of action of ribozymes.

Translation: Structure and role of tRNA in protein synthesis, ribosome structure, basic feature of genetic code and its deciphering, translation (initiation, elongation and termination in detail in prokaryotes as well as eukaryotes), Post translational processing, Control of translation in eukaryotes (Antisense RNA, Heme and interferon).

Module 4: 12 Hours

Regulation of Gene expression in prokaryotes and eukaryotes: Positive and negative regulation. lac-, ara-, his- and trp- operon regulation; antitermination, global regulatory responses; Regulation of gene expression in eukaryotes: Transcriptional, translational and processing level control mechanisms.

Protein localization & Gene Silencing: Export of secretory proteins- signal hypothesis,

transport and targeting of proteins to mitochondria, chloroplast, peroxisomes, Gene Silencing: Definition, types, RNAi pathway, shRNA & CRISPR- CAS.
Non coding RNA: coding and non coding RNA, types of ncRNA : Short ncRNA(mi RNA,Sn RNA,Pi RNA,t-RNA &it's fragments, SnoRNA) long ncRNA ,functional significance of ncRNA.

References:

1. Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, K. and Watson, J.D.1994. Molecular Biology of the Cell. Garland Science, New York.
2. Cooper, G.M. 1997.The Cell: A molecular approach, ASM Press, USA.
3. Darnell, J. Lodish, H. and Baltimore, D. 1990. Molecular Cell Biology. ScientificAmerican Books Inc. NY.
4. Elliott, W. H., and Elliott, D. C. 2006. Biochemistry and Molecular Biology (3rd Indian Ed.). Oxford University Press, Oxford.
5. Garrett, R.H. and Gresham, C.M.1995. Molecular aspects of Cell Biology, International edition, Saunders College Publishing.
6. Karp, G. 1996.Cell and Molecular Biology concepts and experiments, John Wileyand Sons Inc. NY.
7. Lodish, H., Baltimore, D., Berk, A., Zipursky, B.L., Mastsydaira, P., and Darnell, J. 2004. Molecular Cell Biology, Scientific American Books Inc. NY.
8. Mathews, C. K, Van Holde, K. E., Ahern, K. G. 2000. Biochemistry (3rd Ed.)Pearsoneducation.
9. Nelson, D. L., Cox, M. M. 2005. Lehninger. Principles of Biochemistry (4th Ed.). WHFreeman Co.
10. Old, R.W., Primrose, S.B. 1993.Principles of gene manipulation - An introduction togenetic engineering (7th Ed.). Blackwell Scientific Publications.

11. Weblinks :

- https://www.slideshare.net/ShobhaSurbhaiyya/gene- silencing-69645867.
- https://www.slideshare.net/lalvarezmex/dna-topology.

12. Research/Review articles:

- Anderson, P. and Ivanov, P., 2014. tRNA fragments in human health and disease. FEBS letters, 588(23), pp.4297-4304
- Basto, A. P., et al., 2021. Micro RNAs in Tfh regulation: Small molecules with a bigimpact. European Journal of Immunology, 51(2), 292-295
- Crick, F. H. 1958. On protein synthesis. In SympSocExpBiol (Vol. 12, No.138-63, p. 8).
- Karakar, D., *et al*., 2021.The Role of Lnc RNAs in translation. Non coding RNA 7 (1):16.
- Langston, L. D., et al., 2006. DNA replication: keep moving and don't mindthe gap. Molecular cell, *23*(2), 155-160.
- Mleczko, A. M., et al. 2014. Ex-translational function of tRNAs and their fragments in cancer. Acta Biochimica Polonica, *61*(2).

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER II												
Course Name : MOLECULAR BIOLOGY(FCHC)												
PO / CO	**PO-1**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

GENETIC ENGINEERING (FCHC)

4 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. To understand cloning and expression vectors.
2. Methods involved in gene manipulation and techniques of gene analysis.
3. The vast knowledge of gene editing.
4. The knowledge about the Ex vivo and in vivo gene therapy.

Module-I **12 Hours**

Cloning and Expression vectors: Plasmids, lambda vectors, M13 Phage, cosmids, phagemids, Artificial chromosome vectors-YACs, PACs and BACs, plant and animal viruses as vectors, Transposons, Expression vectors- prokaryotic (pRSET, pET), eukaryotic (pcDNA3, pCEP), Baculovirus and Pichia vector system, plant basedvectors- Ti and Ri, binary and shuttle vectors, Gene cloning: genomic cloning, c- DNA cloning,

Module- II **12 Hours**

Gene manipulation : Restriction enzymes, restriction mapping, cloning in plasmid, Phage and cosmid vectors, insertion of foreign DNA into host cells- transformation, electroporation, transfection transient and stable, screening methods for transformants, downstream processing of recombinant proteins, affinity tags- His-tag, GST-tag, MBP-tag, Fc-tag. Construction and screening of genomic and cDNA libraries, chromosome walking, Chromosome Jumping, BAC libraries and assemblyof BACs into contigs.

Module- III **12 Hours**

Gene analysis techniques: Hybridization techniques- Southern, Northern, South-western, Far-western, Colony hybridization, fluorescence *in situ* hybridization, molecular probes-preparation, labelling, amplification, applications, Polymerase chain reaction-Principle, primer designing, Types- RT-PCR, Realtime PCR, colony PCR, Multiplex PCR, Hot-start PCR, asymmetric PCR, Sequencing methods- chemical sequencing of DNA (Maxam and Gilberts methods and Sangers dideoxy method), automated DNA sequencing, sequencing by DE-MALDI- TOFMS, microarray. ChIP and Chip- on- chip techniques Chromogenic *in situ* hybridization, qPCR, next generation sequencing.

Module- IV **12 Hours**

Gene therapy, transgenics and Genome editing: *Ex vivo* and *in vivo* gene therapy, Vectors and other delivery systems for gene therapy, In vitro gene therapy, gene therapy of genetic diseases: eg. Neurological, metabolic disorders and cystic fibrosis, viruses for gene therapy-lentivirus, adenovirus. Gene targeting, knockout mice, genome editing by CRISPR-CAS.

References:

1. Brown, T.A. 2010. Gene Cloning and DNA Analysis-An Introduction (6th Ed.).Blackwell Science.
2. Brown, T.A., 2011. Introduction to Genetics: A Molecular Approach (1st Ed.). GarlandScience.
3. Desmond, S. T., and Nicholl, 2002. An Introduction to Genetic Engineering. (1st Ed.)Cambridge University Press. Cambridge.
4. Glazer, A. N., and Nikaido, H. 2007. Microbial Biotechnology

Fundamentals ofApplied Microbiology (2nd Ed.). Cambridge University Press.
5. Gupta, P. K. 2008. Molecular Biology and Genetic Engineering. Deep and DeepPublications, India.
6. Gupta, V. K., Schmoll, M., Maki, M., Tuohy, M., Mazutti, M. A. 2013. Applications ofMicrobial Engineering. CRC Press.
7. Jane, K. S. 2004 .Genetic Engineering: Principles and Methods (1st Ed.). Springer.
8. Lodish, H., Berk, A., Kaiser, C. A., Krieger, M. 2007 .Molecular Cell Biology (6thEd.).
WH Freeman and Company, New York.
9. Maheshwari, D.K., Dubey, R.C. and Kang, S.C. 2006. Biotechnological Applicationsof Microorganisms. I.K. International Publishing House, New Delhi.
10. Rehm, H. J., and Reed, G.2008. Biotechnology: Genetic Fundamentals and GeneticEngineering (2nd Ed.).Wiley India Pvt Ltd.

11. Weblink:

- **https://www.slideshare.net/SECBIO/genetic-engineering- 13933607**
- **https://www.cabarrus.k12.nc.us/cms/lib/NC01910456/Centri city/Domain/7718/Biotechnology%20PP_Genetic%20Enginee ring_RD.pptx**

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's) WITH PROGRAMMEOUTCOME (PO I – PO XII)

SEMESTER II												
Course Name : GENETIC ENGINEERING (FCHC)												
PO / CO	**PO-1**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

Practical-II (HC)

(Molecular Biology, Genetic Engineering and Molecular Diagnostics / Molecular Plant Pathology /Bioprocess Technology)

5 credits **160 Hours**

Course Outcome: Students should study this paper to know

1. Performing the methodology applied to extract DNA & RNA fromdifferent sources.
2. Determining the purity, concentration and applying it for different digests and ligates.
3. Isolating the plasmid and inducing the gene expression..
4. Producing the recombinant protein.
5. Analysing the molecular diagnosis of diseases using PCR and ELISA.

Molecular Biology, Genetic Engineering and Molecular Diagnostics / Molecular Plant Pathology

1. Estimation of DNA by diphenyl amine method.
2. Estimation of RNA by orcinol method.
3. Isolation of Genomic DNA from yeast cell, Determination of purity and concentrationof isolated DNA using spectrophotometer and agarose gel electrophoresis.
4. Restriction digestion of plasmid and analysis
5. DNA ligation
6. Isolation of plasmids from bacteria and agarose gel electrophoresis.
7. Preparation of competent *E. coli* cells for Bacterial transformation.
8. Induction of gene expression and purification of the induced protein from the host.
9. Amplification, Purification and separation of PCR product.
10. Production of recombinant protein.

Molecular Diagnostics (Applicable only for the students who have selected this paper as soft core)

11. Isolation of Metagenome (sediment/soil).
12. Nucleic acid labeling and Southern Hybridization.
13. RNA isolation and agarose gel electrophoresis.
14. Culture independent analysis of microbes by DGGE (Denatured Gradient GelElectrophoresis).
15. Identification of human bacterial pathogens by Polymerase chain reaction.

Molecular Plant Pathology (Applicable only for the students who have selected this paper as soft core)

16. Isolation of fungal pathogens from plant.
17. Isolation of bacterial plant pathogens.
18. Estimation of phenolic contents in diseased and healthy plants.
19. Extraction of cellulose from plant pathogen.
20. Screening for antagonism.

Bioprocess Technology (Applicable only for the students who have selected this paper as soft core)

21. Study of alcohol fermentation- alcohol from different substrates-estimation of alcohol content.
22. Bioassaymethods- Vitamins.
23. Production of SCP.
24. Screening of antibiotic producing microorganisms
25. Study of fermenter (demonstration).

References:

1. Brown, T.A. 2010. Gene Cloning and DNA Analysis-An Introduction (6th Ed.).Blackwell Science.
2. Brown, T.A., 2011. Introduction to Genetics: A Molecular Approach(1st Ed.). Garland Science.
3. Desmond, S. T., and Nicholl, 2002. An Introduction to Genetic Engineering. (1st Ed.)Cambridge University Press. Cambridge.
4. Glazer, A. N., and Nikaido, H. 2007. Microbial Biotechnology Fundamentalsof Applied Microbiology (2nd Ed.). Cambridge University Press.
5. Gupta, P. K. 2008. Molecular Biology and Genetic Engineering. Deep and DeepPublications, India.
6. Gupta, V. K., Schmoll, M., Maki, M., Tuohy, M., Mazutti, M. A. 2013. ApplicationsofMicrobial Engineering. CRC Press.
7. Jane, K. S. 2004 .Genetic Engineering: Principles and Methods (1st Ed.). Springer.
8. Lodish, H., Berk, A., Kaiser, C. A., Krieger, M. 2007 .Molecular Cell Biology (6thEd.). WH Freeman and Company, New York.
9. Maheshwari, D.K., Dubey, R.C. and Kang, S.C. 2006.BiotechnologicalApplications of Microorganisms. I.K. International Publishing House, New Delhi.
10. Rehm, H. J., and Reed, G.2008. Biotechnology: Genetic Fundamentalsand Genetic Engineering (2nd Ed.).Wiley India Pvt Ltd.

11. Weblink:

- ttps://www.khanacademy.org
- https://www.classcentral.com/
- https://www.slideshare.net/SECBIO/genetic-engineering- 13933607
- https://www.cabarrus.k12.nc.us/cms/lib/NC01910456/Centricity/ Domain/7718/Biotechn ol ogy%20PP_Genetic%20Engineering_RD.pptx

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER II												
Course Name : PRACTICAL – II (HC) (Molecular Biology, Genetic Engineering and Molecular Diagnostics / Molecular Plant Pathology /Bioprocess Technology)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

MOLECULAR DIAGNOSTICS (FCSC)

3 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The course focuses on learning and understanding how the various moleculartechniques that were studied can be developed and utilized in diagnosis.
2. The course explains common analytical techniques and molecular techniques relatedto the development and use of diagnostics.
3. Students learn about the clinical applications of molecular diagnostic in patients withinfectious disease.
4. They can find their future focus in biotechnology companies developing andmarketing Diagnostic kits.

Module-1 **12 Hours**

Introduction and History of diagnostics: Introduction and History of diagnostics of diseases, mode of infection, mode of transmission in infections, factors predisposing to microbial pathogenicity, types & diagnosis of infectious diseases caused by bacteria, fungi, viruses, protozoa and Helminthes, Normal microbial flora of the human body, Host - Parasite relationships.

Traditional disease diagnosis methods: Genetic basis of diseases (Sickle cell anemia & Cystic fibrosis), inherited diseases (Down's syndrome, Turner's syndrome), inborn errors of metabolism (PKU). Philosophy and general approach to clinical specimens, Sample collection-method of collection, transport and processing of samples, Interpretation of results,

Module- 2 **12 Hours**

Molecular techniques for diagnosis: PCR, Real-time; Multiplex; FISH; RFLP; DGGE; SSCP; Nucleic acid sequencing: new generations of automated sequencers; Microarray chips; EST; SAGE; microarray data normalization & analysis; molecular markers: 16S rRNA typing; MALDITOF-MS; Metabolite profile for biomarker detection the tissues in various disorders by making using LCMS & NMR technological platforms,

Biochemical tests & Immunoassays: RIA, ELISA, Chemiluminescent IA, FIA and specific applications, Immuno histochemistry- principle and techniques. Different Levels of Bio Safety containment.

Module-3 **12 Hours**

Major Metabolic & Genetic disorders: Traditional methods for the diagnosis of metabolic errors (Diabetes Type 1 & Type 2, hyperthyrodism & Hypothyrodism., Blood -formation, composition, function and pathology of blood disorders - haemoglobinopathies, Muscle disorders -Duchene muscular dystrophy-DMD, Bone disorders -Rheumatoid arthritis, Skin disorder Muir-Torre syndrome, Eye disorder -Retinitis pigmentosa. Neonatal and Prenatal disease diagnostics, Gender identification using amelogenin gene locus. Amplification of Y chromosome specific Short Tandem Repeats (Y- STR). Analysis of mitochondrial DNA for maternal inheritance, Karyotyping & characteristics of Karyotyping.

Module-4 12 Hours

Cancer diagnosis:

Predicting risk of developing cancer, molecular oncology tests, analysis of the expression of multiple genes and cancer prognosis, breast Cancer: analysis of lymph nodes to detect metastasis of breast cancer, Testing for HER2/neu Overexpression, screening for colorectal cancer: stool-based DNA screening, leukemias and lymphomas, DNA methylation tests and cancer,

Personalized Medicine: Pharmacogenomics , Cytochrome P450 and Drug Metabolism, Targeted Cancer Therapies and Companion Diagnostics Tests, Testing for Epidermal Growth Factor Receptor (EGFR), UGT1A1 Genetic Variants,Antiretroviral Therapy : Response to Antiretroviral Therapy, Thiopurine Methyl transferase and Metabolism of Thiopurine Drugs.

References:

1. Bruns, D. E., Ashwood, E. R., and Burtis, C. A. 2007. Fundamentals of Molecular Diagnostics. Saunders Group.
2. Buckingham, L., and Flaws, M. L. 2007. Molecular Diagnostics: Fundamentals, Methods & Clinical applications. F.A. Davis Company
3. Burtis, C. A., Ashwood,E. R., and Bruns, D. E.2007: Tietz Textbook of Clinical Chemistryand Molecular Diagnosis (5th Ed.). Elsevier.
4. Coleman, W. B., and Tsongalis, G. J. 2006. Molecular diagnostics: for the clinical laboratorian. Springer Science & Business Media.
5. Greenwood, D., Slack, R.C.B., and Peutherer, J.F. 1997.Medical Microbiology: A Guide to Microbial Infections: Pathogenesis, Immunity, Laboratory Diagnosis and Control. (15th Ed.).Churchill Livingstone, London.
6. Leonard, D. G., Bagg, A., Caliendo, A. M., Deerlin, V. M., and Kaul, K. L. (Eds.) 2007. Molecular pathology in clinical practice, pp. 411-424, Springer.
7. McPherson, R. A., and Pincu, M. R. 2007. Henry's Clinical Diagnosis and Management by Laboratory Methods, Elsevier Health Sciences.
8. Weblinks :

- https://www.slideshare.net/Dentist_abdurrahman/genetic-disorders- 47095869
- https://www.ihrp.uic.edu/files/4%20Screening%20and%20Diagnosis.ppt

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITHPROGRAMME OUTCOME (PO I – PO XII)

SEMESTER II												
Course Name : MOLECULAR DIAGNOSTICS (FCSC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

MOLECULAR PLANT PATHOLOGY (SC)

3 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The concepts of plant pathology
2. The host pathogen interaction.
3. *The genetics of plant diseases and resistance.*
4. Application of molecular biology to conventional disease control strategies

Module I: **12 Hours**

The fundamentals of plant pathology: The concept of plant disease, the causal agents, the significance of plant diseases, the control of plant diseases. Fungal diseases: establishing infection, dispersal spores, finding a suitable host, spore attachment, germination process, penetration, germ-tube elongation, induction appressoria, cell-wall degrading enzymes. Basic concepts of necrotrophy and biotrophy, host barriers.

Module II: **12 Hours**

Bacterial and viral diseases: communication between bacteria, plant penetration, attachment, cell wall degrading enzymes, toxins, hormones, extracellular polysaccharides, determinants of host specificity. Plant viruses: Structure and replication, infection, types of viruses, viroids.

Module III: **12 Hours**

Genetics of plant diseases and resistance: Genes and diseases, Mechanism of variability, stages of variation in pathogens, Types of plant disease resistance to pathogens. Defense mechanism of plants, structural, chemical and biochemical defenses. MAP kinases, ion fluxes and calcium homeostasis, The oxidative burst, Nitric oxide, (p)ppGpp signaling.

Module IV: **12 Hours**

Application of molecular biology to conventional disease control strategies: Breeding for disease resistance, the use of tissue culture in plant breeding, the use of chemicals for disease control, biological control-PGPR and PGPF. Transgenic approaches for crop protection- Bt cotton.

References:

1. Haq, I. U., and Ijaz, S., 2020. Plant Disease Management Strategies for Sustainable Agriculture Through Traditional and Modern Approaches. Springer Nature Switzerland.
2. Dickinson, M. 2004. Molecular Plant Pathology. Garland Science.
3. Singh, U. S., and Singh, R. P. 2017. Molecular Methods in Plant Pathology. CRC Press.
4. Wani, S. H. 2019. Disease Resistance in Crop PlantsMolecular, Genetic and GenomicPerspectives. Springer.
5. Weblink:

- https://www.slideshare.net/jeevaraj9/moleecular-mechanism-of- disease-diagnosis
- https://slideplayer.com/slide/10526875/

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (I – P

SEMESTER II												
Course Name : MOLECULAR PLANT PATHOLOGY (SC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	2	3	2	3	3	3	2	3	2	3
CO2	3	3	2	3	2	3	3	3	2	3	2	3
CO3	3	3	2	3	2	3	3	3	2	3	2	3
CO 4	3	3	2	3	2	3	3	3	2	3	2	3
Weighted Average	**3**	**3**	**2**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	**2**	**3**

BIOPROCESS TECHNOLOGY (SC)

Module I: **12 Hours**

Basic principles: Isolation, screening and maintenance of industrially important microbes; effect of nutrients, temperature, pH for the growth of industrially important microorganisms; strain improvement for increased yield.

Batch and continuous fermenters: types of fermenters, chemostat, turbidostat, upstream processing: media formulation and optimization; sterilization; aeration, agitation, ph.

Module II: **12 Hours**

Downstream processing:

Separation of insoluble products – separation of cells and foam; filtration (platefilters, rotary vacuum filter), centrifugation (continuous, basket and bowl centrifuge), Stokes law, sedimentation, flocculation; cell disruption (mechanical and non- mechanical methods);chromatographic techniques, drying (spray, drum, freeze driers); storage and packaging.

Module III: **12 Hours**

Microbial products: Microbial production and application of vitamins, enzymes, organic acids (acetic, citric, gluconic, itaconic, lactic,), amino acids (glutamic acid, lysine, tryptophan), polymers(polysaccharides – xanthan, curdlan, dextran, pullulan,), antibiotics, ethanol, biosurfactants.

Module IV: **12 Hours**

Bioprocess in agro-industry: Isolation and screening of bioagents for the production ofbiofertilizers, biopesticides and plant growth promotion; mass cultivation, formulation and storage life; Bioprocess in sustainable agriculture (organic matter recycling, composting, Jeevamrutha). Production of vaccines, Mab technology.

References:

1. Biotol, 2004. Product Recoveryin Bioprocess Technology. Elsevier India.
2. Casida, L.E. 2016. Industrial Microbiology (2nd Ed). New Age International Publishers.
3. Crueger W., and Crueger A. 1989. Biotechnology – A Textbook of Industrial Microbiology (2nd Ed).Panima Publishing Corporation, New Delhi.
4. Doran, P.M. 2012. Bioprocess Engineering Principles .Elsevier Science & Technology Books.
5. Manjula, P., and Dawn, S.S. 2004. Bio & Enzyme Engineering. Scitech Publications(India) Pvt. Ltd., Chennai.
6. Narayan, C.M. 2011. Biotechnology and Bioprocess Engineering, Galgotia Publications, Pvt. Ltd.
7. Ravindra, P. 2015. Advances in Bioprocess Technology. (1st Ed).Springer.
8. Reed, G. 2004. Prescott & Dunn's Industrial Microbiology.CBS Publishers & Distributors.
9. Stanbury, P.G., and Whitaker, A. 2008. Principles of Fermentation Technology. Elsevier.
10. Shuler, M.L., and Kargi, F. 2002. Bioprocess Engineering: Basic Concepts. Prentice Hall International, Englewood Cliffs.
11. Waites, M.J., Morgan, N.L., Rockey, J.S., and Higton, G. 2001.Industrial Microbiology An Introduction. Blackwell Science.
12. Weblink:

- https://www.slideshare.net/SMCTCR/biotechnologybioprocess- development-and-technology
- https://www.slideshare.net/yongkangbirdnest/lecture-2- introduction-to-bioprocess.

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (PO I –

SEMESTER II												
Course Name : BIOPROCESS TECHNOLOGY(SC)												
PO / CO	**PO-1**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1)-	3	3	2	3	2	3	3	3	2	3	2	3
CO2	3	3	2	3	2	3	3	3	2	3	2	3
CO3	3	3	2	3	2	3	3	3	2	3	2	3
CO 4	3	3	2	3	2	3	3	3	2	3	2	3
Weighted Average	**3**	**3**	**2**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	**2**	**3**

OPEN ELECTIVE - BIOTECHNOLOGY FOR HUMAN WELL-BEING
(For other discipline students)

4 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The basic concepts of Biotechnology.
2. The Vast application of Biotechnology in industry, environment, agriculture forensic science & livestock improvement.
3. The role of biotechnology in improving human health
4. The entrepreneurial possibalities

Module 1: **12 hours**

Application of biotechnology in industry: Enzymes for textile industry, production of alcoholic beverage (wine), antibiotic (Penicillin), enzyme (lipase), single cell proteins, application in food processing: cheese, yoghurt making.

Module 2: **12 hours**

Application of biotechnology in environmental aspects: Solid waste management, industrial and agricultural wastes, water cleaning, bioremediation and biomining, biofuels, Polyhydroxylbutyrate –production and its futuristic applications

Module 3: **12 hours**

Application of biotechnology in forensic science and health: Solving crimes by using DNA finger printing techniques ,human genome project, Antibiotic production, Vaccines and vaccine delivery, recombinant therapeutics-: Genetically engineered insulin, detection of pathogen by molecular techniques(ELISA), antibodies for treatment of human diseases.

Module 4: **12 hours**

Application of biotechnology in agriculture and livestock improvement: Plants as bio factories for molecular pharming: edible vaccines, plantibodies, nutraceuticals micropropagation, entrepreneurship in commercial plant tissue culture, Banana tissue culture, artificial insemination, transgenic animals & plants.

References :

1. Nanda B.B. and Tiwari R.K. (2001), Forensic Science in India: A Vision for the Twenty First Century, Select Publishers, New Delhi.
2. Crueger W and Crueger A. (2000). Biotechnology: A textbook of Industrial Microbiology.2nd edition. Panima Publishing Co. New Delhi.
3. Hans-Joachim, Jördening, Josef Winter (2004), Environmental Biotechnology – Concepts and Applications,
4. Bhasin M.K and Nath S. (2002), Role of Forensic Science in the New Millennium, University of Delhi, Delhi
5. James S.H. and Nord J.J.(2005), Forensic Science: An Introduction to Scientific and Investigative Techniques, 2nd Edition, CRC Press, Boca Raton.

6. Stanbury PF, Whitaker A and Hall SJ. (2006). Principles of Fermentation Technology. 2nd edition, Elsevier Science Ltd.

7. Eckert W.G. and Wright R.K. 1997)., Introduction to Forensic Sciences, 2nd Edition, W.G. Eckert (ED.), CRC Press, Boca Raton .

8. Weblinks :

- https://www.youtube.com/watch?v=AVnOJ9r98UI
- https://www.youtube.com/watch?v=ODm_HkdhIRs
- https://www.youtube.com/watch?v=qOW5e4BgEa4
- https://www.youtube.com/watch?v=Q18B3Cg5cGY

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's) WITHPROGRAMME OUTCOME (PO I – PO XII)

SEMESTER II												
Course Name: BIOTECHNOLOGY FOR HUMAN WELL-BEING (OE)												
PO / CO	**PO-1**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1	2	2	2	3	2	3	2	2	2	3	2	3
CO2	2	2	2	3	2	3	2	2	2	3	2	3
CO3	2	2	2	3	2	3	2	2	2	3	2	3
CO4	2	2	2	3	2	3	2	2	2	3	2	3
Weighted Average	**2**	**2**	**2**	**3**	**2**	**3**	**2**	**2**	**2**	**3**	**2**	**3**

III Semester

Sl.No.	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	Plant Biotechnology	HC	3	1	0	4
2	Immunology	FCHC	3	1	0	4
3	Practical-III (Plant Biotechnology, Immunology and Animal Biotechnology/ Natural Products & Drug Discovery/ Genomics & Proteomics)	HC	0	0	5	5
Soft Core (Any THREE)						
1	Animal Biotechnology	SC	3	0	0	3
2	Natural products & Drug discovery	SC	3	0	0	3
3	Biostatistics & Bioinformatics	SC	3	0	0	3
4	Genomics & Proteomics	SC	3	0	0	3
TOTAL CREDITS **3 Hard Cores (2 theories + 1 practical) :13 credits, 3 Soft Cores: 09 credits**						**22 CREDITS**

PLANT BIOTECHNOLOGY (HC)

4 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The goal of this course is to introduce biotechnology methods in plants.
2. Handling of classical and modern plant biotechnology processes.
3. Understanding breeding of healthy plants for improved characteristics andplants for biomolecule production.
4. Applications of Plant Biotechnology in pharmaceuticals, food industry and in agriculture.

Module I **12 hours**

Methods in Plant Tissue culture: Concept of cellular Totipotency, Role of phytohormones in tissue culture techniques. Establishment of cultures- Nutritional requirements for in vitro cultures, Media preparation and sterilization. **Micropropagation:** Propagation from shoot apical meristem, node cultures, stages of micropropagation and applications. **Germplasm preservation**: Plant germplasm storage using different methods. **Haploid Production**: Methods of androgenic haploid cultures. **Protoplast Culture and Somatic Hybridization**: Protoplast isolation, purification and culture, protoplast fusion, somatic hybridization, applications of somatic hybrids.

Module II **12hours**

Plant transformation techniques: Agrobacterium-plant interaction,Ti plasmid, T- DNA transfer, disarmed Ti plasmid. Agrobacterium-mediated gene delivery- binary and co-integrated vectors. **Direct gene transfer methods**- Particle bombardment, PEG-mediated, Electroporation. **Transgenic plants:** Herbicide resistance, pest resistance, plant disease resistance, improvement of nutritional quality. Biosafety regulations of transgenics.

Module III **12hours**

Secondary metabolite production: Major secondary metabolic pathways- Phenyl propanoid pathways, Shikimate pathway; Induction of bioactive secondary metabolites by plant tissue culture; Value addition via biotransformation; hairy root cultures for production of pharmaceuticals. Bioreactor systems for mass cultivation of plant cells, Molecular pharming: edible vaccines.

Module IV **12 Hours**

Micro algal biotechnology: Cyanobacteria, culture media, cultivation methods, Medicinal compounds from cyanobacteria. **Single-Cell Proteins (SCP):** Spirulina, Chlorella, Yeast as SCP; Production and process; Health benefits of SCP. **Agricultural products:** biofertilizers and Vermiculture **Biofuels:** production of Ethanol, Methane, and their applications. **Intellectual Property Rights (IPR):** IPRs and agricultural technology. Plant Breeder's Rights. Labeling of GM crops and foods.

References:

1. Abdin, M.Z., Kiran, U., Kamaluddin and Ali, A. 2017. Plant Biotechnology:Principles andApplications. Springer.
2. Buchanan , B. B., Gruissem, W and Jones, R. L. 2015. Biochemistry & MolecularBiologyof Plants. John Wiley& Sons.
3. Chawla, H. S. 2000. Introduction to PlantBiotechnology (3rd ed.).CRC Press.https://www.perlego.com/book/1573809/introduction-to-plant- biotechnology- 3e-pdf.
4. Glick, B. R., Pasternak, J. J. and Patten, C.L. 2010. Molecular Biotechnology: Principlesand Applications of Recombinant DNA. ASM Press.
5. Kumar, K. D. 2017. Plant Tissue Culture. New Central Book Agancy (P) Ltd.
6. Razdan, M. K. 2003.Introduction to Plant Tissue Culture (2nd ed.). Science Publishers.
7. Sangita, S., Prasad, B.D., and Kumar, P. 2017. Plant Biotechnology : Transgenics, StressManagement, and Biosafety Issues (2nd Vol.). Apple Academic Press.
8. Slater, A., Scott, N., and Flower, M. 2008. Plant Biotechnology: the genetic manipulationofplants (2nd ed.). OxfordUniversity Press.
9. Umesha, S. 2013. Plant Biotechnology. TERI Press.

10. Weblink:

- https://www.slideshare.net/Wabworld/plant-biotechnology- 129050729
- https://www.austincc.edu/awheeler/Files/BIOL%201414%20Fall%20 2010/chapter%206.ppt.

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)

PROGRAM OUTCOME (PO=I –POXII)

SEMESTER III												
Course Name : PLANT BIOTECHNOLOGY (HC)												
PO / CO	PO- 1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO - XII
CO1	3	3	3	3	3	2	2	3	3	3	3	3
O2	3	3	3	3	3	2	2	3	3	3	3	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3
CO4	3	3	3	3	3	2	2	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**3**

IMMUNOLOGY (FCHC)

4credits **48 Hours**

Course Outcome: Students should study this paper to know

1. Role of immune system in maintaining health
2. Cellular and molecular basis of immune responses
3. How immune responses are triggered and regulated
4. How the knowledge of immunology can be transferred into clinical decision-making through case studies presented in class.

Module-I **12 Hours**

Tissues of immune system: Structural organization and functions of Lymphatic system, Primary lymphoid organs (Bone marrow, Thymus) Secondary lymphoid organs and tissues(Spleen, Lymph node, Tonsils, Adenoids, Peyer's patches, Lamina propria, Mucosa-associated lymphoid tissue, Gut-associated lymphoid tissue).**Cells of the immune system:** Hematopoiesis, Biology, Development and Functions of PMNLs, NK cells, Macrophages, T-Lymphocytes, B-Lymphocytes, Dendritic cells.

Innate immunity: anatomic barriers, physiologic barriers, phagocytic barriers, microbial antagonism, acute phase reactants, anti-microbial peptides, interferons, inflammation, Pattern Recognition Receptors (PRRs), Pathogen Associated Molecular Patterns (PAMPs) and Damage Associated Molecular Patterns (PAMPs). Complement system: components, pathways of activation and biological consequences.

Acquired immunity: Active **&** Passive (Naturally acquired and artificially acquired), Adoptive immunity, Humoral and Cell mediated immune response.

Module-II **12 Hours**

Antigens, and Antibodies: Antigens, Immunogens and Haptens, Factors influencing immunogenicity, adjuvants, epitopes, Structure and functions of immunoglobulins, Genetic basis of immunoglobulin diversity. MHC molecules: Types, structure, diversity and functions.

Antigen recognition: Thymus dependent and independent Antigens, Clonal selection and immunological memory of B and T cells, Antigen processing and presentation

Monoclonal Antibodies: Hybridoma technology and production of mAbs, types, and applications, Advantages and disadvantages of mAbs in therapy.

Module-III **12 Hours**

Immune System in Health and Disease: Immunological Tolerance and Autoimmunity, Autoimmune Diseases (Organ specific autoimmune diseases- Graves' disease, Myasthenia Gravis, Systemic autoimmune diseases-Multiple Sclerosis, Rheumatoid Arthritis, Systemic Lupus Erythematosus), Immunosuppression, Hypersensitivity(Type I, II, III & IV).

Vaccines and Vaccination: Principles of vaccination, Immune response to vaccines (Primary and Secondary response), Whole-Organism vaccines,

Purified macromolecules as vaccines, Recombinant vaccines, DNA vaccines, Multivalent subunit vaccines and Edible vaccines, Vaccine safety, Reverse vaccinology. Overview of COVID-19 vaccines.

Primary & Secondary Immuno-Deficiency Disorders: Primary: Wiscott- Aldrich syndrome, Severe combined immunodeficiency disease (SCID), DiGeorge syndrome, Ataxia-telangectasia, Leucocyte adhesion defects, Chronic granulomatous disease, X-linked agammaglobulinemia, Complement deficiencies. Gammopathies (Multiple myeloma). **Secondary:** AIDS.

Module-IV **12 Hours**

Clinical Immunology: **Transplantation of tissues and organs:** Nomenclature of transplantations, Transplantation reactions, HvG and GvH. Exception from rejections, Major and minor blood groups, Blood transfusion, tissue typing, Kidney and bone marrow transplantations. Immunosuppressive drugs.

Tumor immunology: Neoplasms, tumor- associated antigens, immune response to tumor antigens, immunologic factors favoringtumor growth, immune surveillance,Tumor necrosis factor α and β. Metastatic processes, Immunodiagnosis, Antitumour drugs, Immunotherapy.

Immunological Techniques:.*In vitro* antigen-antibody reactions, serotyping, agglutination, complement fixation, immunoprecipitation, Immunodiffusion, ELISA, RIA, IHC, Immunoelectrophoresis.

References:

1. Abbas A.K., LichtmanA.H. and Pillai S. (2014). Cellular and Molecular Immunology(10th Edition). Online Access: Elsevier Health Sciences.
2. Abbas, AK., Andrew,H., Lichtman, H., Pillai, S. 2012.Basic Immunology: FunctionsandDisorders of the Immune System, ; Saunders
3. Abul, K.A., Andrew, H. L. and Shiv, P. 2019. Basic Immunology: Functions andDisordersof the Immune System. Elsevier India.
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5. Ashim, K. C. 2006. Immunology and Immunotechnology (1sted.). Oxford UniversityPress.
6. Berg J.M., Tymoczko J.L. and Stryer L. (2002). Biochemistry (5th Edition). International edition: WH Freeman & Company Limited
7. Brostoff, J., Seaddin, J. K., Male, D. and Roitt, I. M. 2002. Clinical Immunology.London:Gower Medical Pub.
8. Chapel,H., Haeney,M., Misbah,S., Snowden, N. 2014. Essentials of ClinicalImmunology; Wiley-Blackwell
9. Coico, R. and Sunshine, G. 2015. Immunology – A Short Course (7thed.). Wiley.
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11. Hawley,L., Clarke, B., Ziegler, RJ. 2013. Microbiology and Immunology; LWW

12. Madhavee Latha, P. 2012. A Textbook of Immunology. S. Chand Press.
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14. Nelson D.L., Lehninger A.L. and Cox M.M. (2008). Principles of Biochemistry(12th Edition). Macmillan.
15. Owen J.A., Punt J., Stranford S.A. and Jones P.P. (2013) Kuby immunology: WHFreemanNew York.
16. Parham, P. 2005. The Immune System. New York: Garland Science.
17. Paul, W. E. 2012. Fundamental Immunology. Raven Press.
18. Peter,DJ., Seamus, MJ., Dennis, BR. 2011. Roitt's Essential Immunology; Wiley &Sons,Incorporated, John
19. Pinchuk, G. 2001. Schaum's Outline of Immunology; McGraw-Hill
20. Ramesh, S. R. 2016. Immunology. Mc Graw Hill Education India Pvt. Ltd.
21. Richard C. and Geoffrey S. (2003). Immunology: A short course (6th Edition).WilleyBlackwell.
22. Voet D. and Voet J.G. (2010). Text book of Biochemistry (4thEdition). New York: J.Wiley& Sons.

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's) WITHPROGRAMME OUTCOME (PO I – PO XII)

SEMESTER III												
Course Name : IMMUNOLOGY (FCHC)												
PO / **CO**	**PO- 1**	**PO- II**	**PO-III**	**PO-IV**	**PO- V**	**PO- VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO- XII**
CO1	3	3	3	3	3	2	2	3	3	3	3	3
CO2	3	3	3	3	3	2	2	3	3	3	3	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3
CO 4	3	3	3	3	3	2	2	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**3**

ANIMAL BIOTECHNOLOGY (SC)

4 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. Culturing of animal cells and steps in production of transgenic animals
2. Techniques in animal cell culture
3. Cloning of animals
4. Approaches for tissue engineering

Module I: **12 Hours**

Culture of animal cells: Advantages and limitations of tissue culture, aseptic handling, facilities required, media and cell lines, Different types of media, preparation & Storage etc., Primary culture: Isolation of mouse and chick embryos, human biopsies, methods for primary culture, nomenclature of cell lines, sub culture and propagation, immortalization of cell lines, cell line designation, selection of cell line and routine maintenance. Secondary cell culture,

Cloning and Selection: Cloning protocol, stimulation of plating efficiency, suspension cloning, isolation of clones, isolation of genetic variants, interaction with substrate, selective inhibitors.

Module II: **12 Hours**

Cell separation and characterization: Density based, antibody based, magnetic and fluorescence based cell sorting. Characterization of cells based in morphology, chromosome analysis, DNA content, RNA and protein, enzyme activity, antigenic markers, cytotoxicity assays, cell quantitation, cell culture contamination: monitoring and eradication, cryopreservation.

Culturing of specialized cells: Epithelial, mesenchymal, neuro ectodermal, hematopoietic gonad and tumor cells, Lympocyte preparation, culture of amniocytes, fish cells, confocal microscopy. Stem cell culture and its applications

Organic and embryo culture: Choice of models, organ culture, histotypic culture, filter-well inserts, neuronal aggregates whole embryo culture eggs, chick and mammalian embryos.

Module III: **12 Hours**

Cell and Tissue engineering: Growth factors for *in situ* tissue regeneration, biomaterials in tissue engineering, approaches for tissue engineering of skin, bone grafts, nerve grafts. Haemoglobin- based blood substitutes, bio artificial or biohybrid organs. Limitations and possibilities of tissue engineering, 3D bioprinting. ***In vitro*** **fertilization and Embryo transfer:** *In vitro* fertilization in Humans, Embryo transfer in Humans, Super ovulation and embryo transfer in farm animals e.g.: Cow

Cloning of Animals: Methods and uses. Introduction, nuclear transfer for cloning, cloning from- embryonic cells, adult and fetal cells. Cloning from short-term cultured cells: cloning of sheep, monkeys, mice, pets, goats and pigs. Cloning from long-term cultured cells: Cloning of cows from aged animals. Cloning efficiency, cloning for production of transgenic animals, gene targeting for cloned transgenic animals, cloning for conservation, human cloning: ethical issues and risks.

Module IV: **12 Hours**

Transfection methods and transgenic animals: Gene transfer, transfection of fertilized eggs or embryos, unfertilized eggs, cultured mammalian cells, targeted gene transfer. Transgenic animals and applications: mice and other animals, sheep, pigs, goats, cows and fish. The legal and socio- economic impact of biotechnology at national and international levels, public awareness. Biosafety regulations- guidelines for research in transgenic animals, public awareness of the processes of producing transgenic organisms.

References:

1. Ashish, S.V. andAnchal,S. 2013. Animal Biotechnology: Models in Discovery andTranslation.Academic Press.
2. Freshney, R.I. 2015. Culture of Animal Cells: A Manual of Basic Technique andSpecialized Applications. John Wiley& Sons.
3. Gordon, I. 2004. Reproductive Techniques in Farm Animals. Oxford: CABInternational.
4. Gorakh, M., Manishi, M., Birbal, S. andSanjeev, K. G.2019. Advances in AnimalBiotechnology. Springer.
5. Myrone, M. L.,Gordon, D., Michael, F. G., Margaret A. L.,Gary J. N.,James P.N. And Rino, R. New Generation Vaccines (4th Ed.). CRC Press.
6. Niemann, H., and Wrenzycki.C. 2018. Animal Biotechnology 1: Reproductive Biotechnologies. Springer.
7. Niemann. H , and Wrenzycki. C. 2018. Animal Biotechnology 2: Emerging BreedingTechnologies. Springer.
8. Portner, R. 2007. Animal Cell Biotechnology: Methods and Protocols. Humana Press.
9. Richard, T. 2004. Gene Transfer to Animal Cells. Taylor & Francis.
10. Srivastava. A.K., Singh, R. K., and Yadav, M.P. 2018. Animal Biotechnology.OxfordandIBH Publishing Press.

10. Weblink:

- https://www.slideshare.net/Pure-man/introduction-to-animal- biotechnology
- https://www.slideshare.net/Pure-man/introduction-to-animal- biotechnology
- https://slideplayer.com/slide/3514424/

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's) WITH PROGRAMMEOUTCOME (PO I – PO XII)

SEMESTER III												
Course Name : ANIMAL BIOTECHNOLOGY(SC)												
PO / CO	**PO-1**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1	3	3	3	3	3	2	2	3	3	3	3	3
CO2	3	3	3	3	3	2	2	3	3	3	3	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3
CO4	3	3	3	3	3	2	2	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**3**

PRACTICAL- III (HC):

(Plant Biotechnology, Immunology and Animal Biotechnology/ Natural Products & Drug Discovery/ Genomics & Proteomics)

5 credits **160 Hours**

Course Outcome: Students should study this paper to know

1. Hands on training in plant tissue culture
2. Performing the production of synthetic seeds.
3. Performing animal cell culture techniques.
4. Performing immunotechniques.
5. Drug discovery, isolation of genes and protein purification.

Plant Biotechnology, Immunology and Animal Biotechnology/ Natural Products & Drug Discovery

1. Preparation of plant tissue culture media.
2. Organ cultures- Shoot tip, nodal, anther and leaf cultures.
3. Callus induction.
4. Encapsulation of somatic embryos and production of synthetic seeds.
5. Estimation of phenolic content.
6. Purification of IgG.
7. Slide agglutination test/ Blood grouping.
8. Immunoprecipitation test- Ouchterlonydouble diffusion.
9. ELISA for quantification of an antigen.
10. Western blotting and detection.
11. Review of literature presentation.

Animal Biotechnology (Applicable only for the students who have selected this paper as soft core)

12. Preparation of media, culture and maintenance of cell lines, trypsinization.
13. Cell counting by Tryphan blue exclusion method.
14. MTT assay for cytotoxicity.
15. Culture of transformed cells.
16. Lymphocyte preparation.

Natural Products & Drug Discovery (Applicable only for the students who have selected this paper as soft core)

17. Soxhlet extraction of medicinally important plants.
18. Estimation of alkaloids.
19. Antioxidant activity of plant extract.
20. Anticancer activity of plant extract.
21. Antimicrobial activity of plant extract.

Genomics & Proteomics (Applicable only for the students who have selected this paper as soft core)

22. Isolation of plasmids.
23. Isolation of mitochondrial DNA.

24. Isolation of Chloroplast DNA.
25. Agarose gel electrophoresis.
26. Separation of proteins by SDS-PAGE.

References:

1. Abdin, M.Z., Kiran, U., Kamaluddin and Ali, A. 2017. Plant Biotechnology:Principles and Applications. Springer..
2. Abbas, AK., Andrew,H., Lichtman, H., Pillai, S. 2012.Basic Immunology: Functions andDisorders of the Immune System,Saunders
3. Ashish, S.V. andAnchal,S. 2013. Animal Biotechnology: Models in Discovery andTranslation.Academic Press.
4. Freshney, R.I. 2015. Culture of Animal Cells: A Manual of Basic Technique andSpecialized Applications. John Wiley& Sons.
5. Brahmachari, G. 2011. Bioactive Natural Products: Opportunities and ChallengesinMedicinal Chemistry. World Scientific Publishing Company.
6. Charis, G. 2019. Nutraceuticals And Natural Product Pharmaceuticals. AcademicPress.
7. Thangadurai, D., and Sangeetha, J. 2015.Genomics and Proteomics: Principles,Technologies, and Applications. CRC Press.

8. Weblink:

- https://www.slideshare.net/Pure-man/introduction-to- animal-biotechnology
- https://www.slideshare.net/Pure-man/introduction-to- animal-biotechnology
- https://slideplayer.com/slide/3514424/

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER III												
Course Name : PRACTICAL – III (HC) (Plant Biotechnology, Immunology and Animal Biotechnology/ Natural Products & Drug Discovery/ Genomics & Proteomics)												
PO / CO	**PO-1**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

NATURAL PRODUCTS & DRUG DISCOVERY (SC)

3 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The prospects of Natural products in 21st Century.
2. The use of different natural sources for discovery of drug.
3. To perform molecular modelling.
4. Regulatory guidelines for preclinical studies

Module I **12 Hours**

Prospects of Natural Products research in the 21st Century: Introduction, use of natural products in traditional medicines, Marine natural products, Use of herbal remedies and the potential of drug development from natural products and noveldrug templates: paclitaxel, podophyllotoxin, artimisinin etc. Recent development in the research on naturally occurring polyphenolic compounds: - Introduction, biosynthetic pathway, isolation and characterization, biological and pharmacological activities of different class of phytoconstituents - alkaloids, flavonoids, terpenoids, glycosides, steroids, saponins, (Antioxidant activity, cyto-toxic activity, anticancer and anti- microbial activity etc). aid design of clinical studies.

Module II **12 Hours**

Natural product drug discovery from different sources (marine, microbial, mineral etc): Introduction, recent developments, applications. Extraction and Isolation techniques: Introduction, Principle and Applications of different extraction & isolation methods viz Soxhlet extraction, microwave extraction, supercritical fluid extraction, solid phase extraction,Column chromatography, Flash chromatography.

Module III: **12 Hours**

Target identification and molecular modelling: Identification of target or drug leads associated with a particular disease by different techniques including combinations of molecular modeling, combinatorial libraries and high-throughputscreening (HTS); Use of bioinformatics and data processing in identification of lead compounds; Rational drug design, Modelling drug/receptor interactions with the emphasis on molecular mechanisms, molecular dynamics simulations and homology modelling; Conformational sampling, macromolecular folding, structural bioinformatics, receptor-based and ligand-based design and docking methods, in silico screening of libraries, semi-empirical and ab-initio methods, QSAR methods, molecular diversity, design of combinatorial libraries of drug-like molecules, macromolecular and chemical databases.

Module IV: **12Hours**

Lead optimization: Identification of relevant groups on a molecule that interact with a receptor and are responsible for biological activity; Understanding structure activity relationship; Structure modification to increase potency and therapeutic index; Concept of quantitative drug design using Quantitative structure–activity relationship models (QSARmodels); Bioanalytical assay development in support of in vitro and in vivo studies (LC/MS/MS, GC/MS and ELISA). Preclinical development: Principles of drug absorption,

drug metabolism and distribution - intestinal absorption, metabolic stability, drug-drug interactions, plasma protein binding assays, metabolite profile studies, Principles of toxicology, Experimental design for preclinical and clinical PK/PD/TK studies, Selection of animal model; Regulatory guidelines for preclinical PK/PD/TK studies; Scope of GLP, SOP for conduct of clinical & non clinical testing, control on animal house, report preparation and documentation.Integration of nonclinical and preclinical data tool.

References:

1. Brahmachari, G. 2011. Bioactive Natural Products: Opportunities and ChallengesinMedicinal Chemistry. World Scientific Publishing Company.
2. Charis, G. 2019. Nutraceuticals And Natural Product Pharmaceuticals. AcademicPress.
3. Kratika, D., Swapnil, G., Naveen, C,.and Vivek, D. 2015. Drug Discovery andDevelopment in Medicinal Chemistry. NiraliPrakashan.
4. Kshirsagar, T. 2008. High-Throughput Lead Optimization in Drug Discovery.CRC Press.
5. Moll, J., and Carotta, S. 2019. Target Identification and Validation in Drug Discovery: Methods and Protocols. Springer.
6. Olga, G. and Francisca, V. 2012. Drug Discovery From Natural Products. RoyalSociety Of Chemistry.
7. Roessner U.,and Dias, D. A. 2013. Metabolomics Tools For Natural ProductDiscovery: Methods and protocols. Humana Press.
8. Subhash, C. M., Vivekananda, M., and Tetsuya, K. 2018. Natural Products and DrugDiscovery: An Integrated Approach. Elsevier.
9. Vincent, P. G. 1994.The Discovery of Natural Products withTherapeautic Potential.Elsevier.
10. Wade, R.C. and Salo-Ahen, O.M.H. 2019. Molecular Modelingin DrugDesign.MDPIPress.

11. Weblink:

- https://www.slideshare.net/rahulbs89/role-of-natural-product-in-drug- discovery
- http://ccc.chem.pitt.edu/wipf/courses/5119_05_files/lecture_files/lecture.ppt

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITHPROGRAMME OUTCOME (PO I – PO XII)

SEMESTER III												
Course Name : NATURAL PRODUCTS & DRUG DISCOVERY (SC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	2	2	3	3	3	3	3
CO2	3	3	3	3	3	2	2	3	3	3	3	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3
CO4	3	3	3	3	3	2	2	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**3**

BIOSTATISTICS & BIOINFORMATICS (SC)

3 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. Knowledge of basic statistical methods to solve problems.
2. Students are taught to operate various statistical software packages.
3. The in-depth knowledge about the bioinformatics.
4. Understanding about the sequence analysis tools and also about the drug discovery.

Module I: **12Hours**

Biostatistics-Statistical concepts: Data structure, sampling methods, descriptive statistics - data collection, tabulation Measures of central tendency: mean, median, mode Measures of dispersion: Range, interquartile range, mean deviation, standard deviation, standard error, coefficient of variation, confidence limits.

Module II : **12 Hours**

Types of distribution of data: Normal, Binomial, Poisson. **Hypothesis testing**: Z-test, t- test, ANOVA, multiple comparisons – LSD and DMRT,chi- square test; Regression and correlation; Non-parametric significance tests; Experimental designs- CRBD, RCBD, LSD, factorial; data transformation- arcsine, log, square-root. Probability.

Module III: **12Hours**

Bioinformatics- an overview, Definition and History, Applications of Bioinformatics. Introduction to Genomics: Genome mapping, Genome sequencing, human Genome project. Introduction to Proteomics: Tools and techniques in proteomics.Sequence formats. Homology and similarity. Introduction to Data mining, NCBI, EBI, DDBJ, Database search software:ENTREZ, SRS, Expasy.Protein Sequence Databases, UNIPROT, Structure Database: PDB.

Sequence Analysis: definition of sequence analysis, Introduction to Sequences, alignments and Dynamic Programming; Local alignment and Global alignment (algorithm and example), Pair wise Alignment, and significance of alignment, Tools of sequence alignment, Homology sequence search, Nucleotide Sequence Analysis, Protein Sequence Analysis, Parameters of Blast, BlastN, BlastP, Interpreting Blast Results.

Module IV: **12 Hours**

Multiple sequence analysis: scoring pattern, exhaustive and heuristic algorithms; Parameters of CLUSTAL-W and CLUSTALX for multiple sequence alignment, interpretation; Phylogenetic analysis: methods and tools. RASMOL Display Styles- Wire Frame, Ball and Stick, Space Fill, Ribbons, Cartoons

Drug discovery: Introduction, drug discovery technologies, virtual high-throughput *in silico* screening, Target validation EMBOSS Introduction to emboss Software package and its key features, other latest commercial softwares.

References:

1. Amdekar, S.J. 2014.Statistical Methods for Agricultural and Biological Sciences.Narosa Publishing House.
2. Baxevamis, A.D. and Ouellette, F.B.E. 2004. Bioinformatic: A practical guide totheanalysis of genes and proteins. John Wiley& Sons.
3. Chen, D.G.,and Zhao, Y. 2018. New Frontiers of Biostatistics and Bioinformatics.Springer.
4. Emden, H.V. 2008. Statistics for Terrified Biologists. Blackwell Publishing Press.
5. Higgins, D. and Taylor, W. 2000. Bioinformatics – Sequence, Structure and DataBanks. Oxford University Press.
6. Hodgman, C., French, A. and Westhead, D. 2010. BIOS Instant Notes:Bioinformatics. Taylon& Francis.
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9. Rastogi, S.S., Mendivata, N., and Rastogi, P. 2013. Bioinformatics Methods and Applications: Genomics, Proteomics and Drug Discovery. PHI Press.
10. Srinivas, V.R. 2005. Bioinformatics: A modern approach. Prentice Hall India Learning Pvt. Ltd.

11. Weblink:

- https://www.slideshare.net/hafidztio/biostatistics-and-statistical bioinformatics
- https://www.slideserve.com/minna/statistics-in-bioinformatics-powerpoint- ppt-presentation
- https://www.powershow.com/viewfl/58edf7-MzAxN/Biostatistics_and_Statistical_Bioinformatics_powerpoint_ppt_pre sentation.

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's) WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER III												
Course Name : BIOSTATISTICS & BIOINFORMATICS (SC)												
PO / CO	PO- 1	PO-II	PO-III	PO-IV	PO- V	PO- VI	PO-VII	PO-VIII	PO-IX	PO- X	PO-XI	PO-XII
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

GENOMICS & PROTEOMICS (SC)

3 credits **48 Hours**

Course Outcome: Students should study this paper to know

1. The concepts of genome, genome sequencing and genome mapping
2. The role of molecular markers in comparative genomics
3. The knowledge about structural and functional proteomics
4. Understanding about the mass spectra analysis.

Module I **12 Hours**

Genome: Brief overview of prokaryotic and eukaryotic genome organization; extrachromosomal DNA: bacterial plasmids, mitochondria and chloroplast

Genome mapping: Genetic and physical maps; markers for genetic mapping; methods and techniques used for gene mapping, physical mapping, linkage analysis, cytogenetic techniques, FISH technique in gene mapping, somatic cell hybridization, radiation hybrid maps, *in situ* hybridization, comparative gene mapping.

Genome sequencing: Next generation sequencing, Human Genome Project, genome sequencing projects for microbes, plants and animals, accessing and retrieving genome project information from the web.

Module II **12 Hours**

Comparative genomics: Identification and classification of organisms using molecular markers- 16S rRNA typing/sequencing, SNPs; use of genomes to understand evolution of eukaryotes, track emerging diseases and design new drugs; determining gene location in genome sequence.

Functional genomics: Transcriptome analysis for identification and functional annotation of gene, Contig assembly, chromosome walking and characterization of chromosomes, mining functional genes in genome, gene function- forward and reverse genetics, gene ethics, Pharmacogenomics& Personalized medicine.

Module III **12 Hours**

Introduction to proteomics: Proteome and nature of proteome, Proteins - amino acids, peptides and polypeptides, separation of proteins /peptides by single and two- dimensional gel electrophoresis and detection- staining and immunoblot

Module IV **12 Hours**

Structural and functional proteomics: Mass spectrometry – fundamentals, mass spectrometry ionization techniques, mass analyzers – MALDI-TOF, MS-MS, LC- MS-MS; In-gel digestion, PMF, Mass spectra analysis – search engines: Mascot, swiss-prot, protein prospector, identification, molecular weight, determination of peptide

sequence, determination of post- translational modifications, peptide sequencing using tandem mass spectrometry, quantitative proteomics- iTRAQ, functional annotation of proteins, protein chips and functional proteomics; clinical and biomedical applications of proteomics.

References:

1. Attwood, T.K., Smith, P., andPhukan, S. 2008. Introduction to Bioinformatics.DorlingKindersley (India) Pvt. Ltd.
2. Baxevamis, A.D., and Ouellette, F.B.E. 2004. Bioinformatic: A practical guide totheanalysis of genes and proteins. John Wiley& Sons.
3. Brown, T. A. 2006. Genomes (3rd Ed.). Garland Science Publication.
4. Higgins, D., and Taylor, W. 2000. Bioinformatics: Sequence, Structure and DataBanks.Oxford University Press.
5. Primrose, S. B., and Twyman, R.M. 2006.Principles of Gene Manipulation andGenomics.Blackwell Publication.
6. Singh, R. 2015. Bioinformatics: Genomics and Proteomics. Vikas Publishing House.
7. Thangadurai, D., and Sangeetha, J. 2015.Genomics and Proteomics: Principles,Technologies, and Applications. CRC Press.
8. Wajapeyee, N. 2014. Cancer Genomics and Proteomics: Methods and Protocols(2nd Ed.). Humana Press.
9. Winnacker, E. L. 2003. From Genes to Clones. VCH Press.
10. Weblink:

- https://www.slideshare.net/lasaga_garry/genes-genomics-and- proteomics
- https://slideplayer.com/slide/4786114/

ARTICULATION MATRIX MAPPING OF COURSE OUTCOME (CO's)WITH PROGRAMME OUTCOME (PO I – PO XII)

SEMESTER III												
Course Name : GENOMICS AND PROTEOMICS(SC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	2	3	2	3	3	3	2	3	2	3
CO2	3	3	2	3	2	3	3	3	2	3	2	3
CO3	3	3	2	3	2	3	3	3	2	3	2	3
CO4	3	3	2	3	2	3	3	3	2	3	2	3
Weighted Average	3	3	2	3	2	3	3	3	2	3	2	3

IV Semester

Sl.. No.	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	Project Work	HC	0	2	6	08
TOTAL CREDITS 1 Hard Core :08 credits						**08 CREDITS**

PROJECT WORK (HC)

8 credits

Course Outcome: Students should study this paper to know

1. Review research papers for find out gap in the literature.
2. Understand designing experiments based on the research problem.
3. Understand compiling and analyzing of data.
4. Able to write a comprehensive project report/review.

SEMESTER IV												
Course Name : PROJECT WORK (HC)												
PO / CO	**PO-1**	**PO-II**	**PO-III**	**PO- IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3
Weighted Average	**2**	**2**	**2.75**	**2.25**	**2**	**2**	**3**	**3**	**3**	**3**	**3**	**3**

Mahajana Education Society (R)

Education to Excel

SBRR Mahajana First Grade College (Autonomous)

Post Graduate Wing Pooja Bhagavat Memorial Mahajana Education Center

KRS Road, Metagalli, Mysuru

SCHOOL OF LIFE SCIENCES

M.Sc. MICROBIOLOGY

[Choice Based Credit System (CBCS)]

PROGRAMME STRUCTURE

MINIMUM CREDITS TO BE EARNED BY A STUDENT IN A NORMAL PHASE TO SUCCESSFULLY COMPLETE M.Sc. MICROBIOLOGY DEGREE IN FOUR SEMESTERS

Semesters	Hardcore		Softcore		Open elective		Total	
	Numbers	Credits	Numbers	Credits	Numbers	Credits	Numbers	Credits
I semester	06	20	01	03	-	-	07	23
II semester	04	12	02	06	1	04	07	22
III semester	04	12	03	09	-	-	07	21
IV semester	1	07	01	03	-	-	02	10
Total	**15**	**51**	**07**	**21**	**1**	**04**	**23**	**76**

Minimum Credits for Hard Core	42
Minimum Credits for Soft Core	16
Minimum Credits for Open Elective	04
Minimum Total Credits	76

I Semester

Sl No	Code	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	**24E101**	Bacteriology	HC	3	1	0	4
2	**24E102**	Virology	HC	3	1	0	4
3	**24E103**	Techniques in Biology	FCHC	3	1	0	4
4	**24E104**	Molecular Cell Biology	FCHC	3	1	0	4
5	**24E105**	**Practical IA** (Techniques in Biology & Bacteriology & Virology)		0	0	2	2
6	**24E106**	**Practical IB** (Molecular Cell Biology & Environmental Microbiology)		0	0	2	2
		Soft Core (Any one)					
7	**24E107**	Environmental Microbiology	SC	3	0	0	3
8	**24E108**	Fundamentals of Biochemistry	FCSC	3	0	0	3
TOTAL CREDITS **6 Hard Core (4 theory + 2 practicals) :20 credits** **1 Softcore: 03 credits**							**23 CREDITS**

***Note: For students those who wish to have more than one softcore, Bridge course/Add-on course (theory) will be provided.**

II Semester

Sl No	Code	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	**24E201**	Molecular Biology	FCHC	3	1	0	4
3	**24E202**	Genetic Engineering	FCHC	3	1	0	4
4	**24E203**	**Practical IIA**: (Molecular Biology & Genetic Engineering)		0	0	2	2
5	**24E204**	**Practical IIB:** (Microbial Physiology& Genetics)		0	0	2	2
		Soft Core (Any two)					
6	**24E205**	Microbial Physiology	SC	3	0	0	3
7	**24E206**	Molecular Diagnostics	FCSC	3	0	0	3
8	**24E208**	Genetics	SC	3	0	0	3
	24E207	Microbes in day to day life	OE	3	1	0	4
TOTAL CREDITS **4 Hard Core (2 theory + 2 practicals) :12 credits** **2 SoftCore: 06 credits** **1 Open elective :04 credits**							**15+4=22 CREDITS**

III Semester

Sl No	Code	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	**24E301**	Medical Microbiology	HC	3	1	0	4
2	**24E302**	Immunology	FCHC	3	1	0	4
3	**24E304**	**Practical-IIIA:** Immunology & Medical Microbiology & Food Microbiology		0	0	2	2
4	**24E305**	**Practical -IIIB** Mycology and Agricultural Microbiology		0	0	2	2
		Soft Core (Any Three)					
5	**24E306**	Mycology	SC	3	0	0	3
6	**24E307**	Agricultural Microbiology	SC	3	0	0	3
7	**24E308**	Genomics and Proteomics	SC	3	0	0	3
8	**24E309**	Food Microbiology	SC	3	0	0	3
TOTAL CREDITS 4 Hard Core (2 theory + 2 practical) :12 credits 3 SoftCore: 09 credits							**21 CREDITS**

IV Semester

Sl No	Code	Title of the Paper	Course Type	Credit Pattern L	T	P	Total Credits
1	**24E401**	Project Work	HC	0	1	6	7
2	**24E403**	Industrial Microbiology	SC	3	0	0	3
TOTAL CREDITS 1 Hard Core (PW) : 07credits 1 SoftCore: 03credits							**10 CREDITS**

Grand Total Credits: 76

Syllabus

SCHOOL OF LIFE SCIENCE

I SEMESTER

HARDCORE:BACTERIOLOGY

TotalCredit:04 **Total Hours: 48 hours**

Course outcome: Students should study this paper to know –

1. The structure of bacteria and itsidentification
2. The different agents to inhibit bacteria
3. The concept and working principles ofmicroscopes
4. Classification and salient features of different groups ofbacteria

Module-I **12hrs**

Introduction: Important events in development of bacteriology, Scope and relevance of bacteriology. Economic importance of bacteria.

Cell Structure: An overview of bacterial size, shape and arrangement, structure, chemical composition of cell wall of Archaebacteria, gram-negative bacteria, gram-positive bacteria and acid fast bacteria, cell wall deficient organisms including L-form structure, composition and function of cell membrane, capsule, flagella, pili, Inclusion bodies, ribosomes, mesosomes, reserve food materials , magnetosomes and phycobilisomes, endospores, bacterial nucleic acids – chromosome, plasmid, transposons, integrons and antibiotic resistance cassettes. **Microscopy:** Working Principles of bright field microscope, fluorescent microscope,dark field microscope, phase contrastmicroscope, stereo microscope, confocal microscopy and electron microscope. Preparation of sample for electron microscopic studies. Application and importance of above microscopes. Measurement of microscopicobjects.

Module-II **12hrs**

Bactericidal and bacteriostatic agents - Factors affecting static and cidal activity, phenols and phenolic compounds, alcohols, halogens, heavy metals, dyes, detergents, aldehydes Non-medical uses of antibiotics. Assay methods of antimicrobial agents – Phenol coefficient, qualitative assay of drugs (drug sensitivity testing), quantitative assays – liquid tube assay (MIC), agar tube assay. Agar plateassay

Module-III **12hrs**

Growth, Cultivation and control of Bacteria: Nutrient requirements, nutritional types of bacteria, culture media, classification of media.Growth:

Nutritional uptake, Growth kinetics, generation time, growth curve, factors affecting growth. Methods for measurement of microbial growth – direct microscopy, viable count estimates, turbidometry, and biomass. Aerobic, anaerobic, batch, continuous and synchronous cultures. Methods of pure culture isolation, Enrichment culturing techniques, single cell isolation, and pure culture development. Preservation and Maintenance of Microbial cultures: Repeated subculturing, preservation at low temperature, sterile soil preservation, mineral oil preservation, deep freezing and liquid nitrogen preservation, lyophilization. Advantages and disadvantages of each method. Control of microorganisms: Antimicrobial agents, physical and chemical methods. Principles, functioning and types of Biosafetycabinets.

Module-IV **12hrs**

Characteristics and Salient features of major groups of Bacteria: Archaebacteria: general characteristics and classification; extremophiles, halophiles, thermophiles and barophiles; General characteristics, classification, diversity and distribution, economic importance of .**Actinomycetes, Cyanobacteria**. **Bioluminescent bacteria;** characteristics and examples, mechanism of bioluminescence. General characteristics, life cycle, growth, multiplication and significance of Mycoplasma, Rickettsiae and Chlamydia

REFERENCES:

1. Black, J.G. 2012. Microbiology: Principles and Explorations (8th ed.). Wiley
2. Brown, A. 2011. Benson's Microbiological Applications Short Version (Brown, Microbioligical Applications) (12th ed.). McGraw-Hill Science/Engineering/Math
3. Hogg, S. 2013. Essential Microbiology (2nd ed.).Wiley-Blackwell
4. Leboffe, M.J., Pierce, B.E., and Ferguson, D. 2012. Microbiology Laboratory Theory & Application, Brief (2nd ed.). Morton Publishing Company
5. Madigan, M.T., D.P. Clark, Stahl, D., and Martinko, M.J. 2012. Brock Biology of Microorganisms (13th ed.). BenjaminCummings
6. Mara, P., Duncan, and Horan, N.J. 2003. Handbook of Water and Wastewater Microbiology, AcademicPress
7. Perry, J.J., Staley, J., and Lory, S. 2002. Microbial Life, SinauerAssociates.
8. Pommerville, J.C. 2010. Alcamo's Fundamentals of Microbiology (9th Revised ed.). Jones and Bartlett Publishers,Inc
9. Sherwood, A. and Willey, W. 2007. Prescott, Harley, and Klein's Microbiology (7th Int. ed.).McGraw-Hill

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	2	3	3	2	3	3
Weighted average	3	3	2.75	3	3	3	2.75	3	3	2.75	3	3

Hardcore Virology

TotalCredit:04 **Total Hours: 48 hours**

Course outcome: Students should study this paper to know –

1. Structure and functioning ofviruses
2. Infectious cycle and replication pattern
3. Viruses as tool forvaccination
4. Host and virus specificresponses

Module-I **12hrs**

A) The science of virology: Concept and scope of virology. Definitive properties of viruses: Morphology, Ultra structure, Chemical composition - proteins, nucleic acids, and other contents. Classification and nomenclature of viruses. Evolutionary importance ofviruses.

B) Working with viruses: Visualization and enumeration of virus particles, Biological activity of viruses, Physical and chemical manipulation of the structural components of viruses, Characterization of viral product expressed in the infected cells. Isolation and purification of viruses, Detection of viruses: physical, biological, immunological and molecularmethods.

Module-II **12hrs**

A) Virus Infectious Cycle: Adsorption/attachment, Entry, Disassembly/uncoating, Nucleic acid and Protein synthesis, Intracellular trafficking, Assembly, Maturation andRelease.

B) Replication patterns of specific viruses: Viruses with RNA genomes; DNA genomes. Identification of virus prototypes associated with different virus replication schemes; Details on important viruses namely Herpes virus, Poliovirus, Influenza virus, coronavirus, SV40 and Adeno Virus, Poxviruses, Hepatitis Viruses,Retroviruses.

Module-III **12hrs**

A) Virus-Host Interactions: Types of infections: Acute (RSV, influenza, viral encephalitis), Persistent (Hepatitis B, C, HIV), Latent (HSV), Slow (scrapie). Maternal-fetal transmission, Transformation and oncogenesis resulting from virus infections (warts, lymphoma, hepato-cellular carcinoma). Vector- borne and emerging diseases (sources andcauses).

B) Host-responses to viruses: Innate (cytokines, interferons, NK cells) and adaptiveimmunity to viruses (antibody and cell-mediated immunity)

C) Prevention and control of viral diseases: Vaccines: History (smallpox, rabies, polio, measles, mumps, HPV, hepatitis B). Live-attenuated and killed- virus vaccines, subunit vaccines, nucleic acid based, & viral-vector-based vaccines. Pre- and post-exposure prophylaxis. **Antiviral drugs:** Nucleoside analogs, reverse transcriptase inhibitors, fusion inhibitors, maturation/protease inhibitors.

Module-IV **12hrs**

A) Propagation, purification, characterization and identification and genomics of plant viruses: General methods of propagation of plant viruses; purification of plant viruses using centrifugation, chromatography and electrophoresis techniques, methods employed in

identification of plantviruses.

B) Sub-viral particles: Discovery, Structure, Classification, replication and diseases causedby Satellite, Satellites virus, Virusoids, Viroids andPrions.

C) Microbial viruses: Diversity, classification, characteristics and applications of bacteriophages, and general account on algal, fungal and protozoanviruses.

D) Viruses as tools: Study of gene expression and regulation in host cells, use as gene delivery vehicles to treat genetic disorders or asvaccines.

REFERENCES:

1. Cann, A.J. 2011. Principles of Molecular Virology (5th ed.).Elsevier

2. Carter, J., and Saunders, V.A. 2007. Virology: Principles and Applications,JohnWiley&Sons,westSusscex,England.

3. Clokie, H., Martha, R.J., and Andrew, K. 2009. Bacteriophages, Methods and Protocols, Volume 1: Isolation, Characterization, and Interactions, HumanaPress

4. Dimmock, N., Easton, A., and Leppard, K. 2009. Introduction to Modern Virology (6th ed.).Wiley-Blackwell

5. Flint, J.S., Enquist, L.W., and Shalka, A.M. 2004. Principles of Virology: Molecular Biology,Pathogenesis, and Control of Animal Viruses, American Society forMicrobiology

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7. Lobocka, J., Malgorzata, K., and Szybalski, W.T. 2012. Bacteriophages (2nd ed.). AcademicPress

8. Matthews, Ford, R.E., and Hull, R. 2002. Matthews' Plant Virology (4th ed.). Gulf ProfessionalPublishing.

9. van Regenmortel, M.H.V., and Mahy, B.W.J. 2009. Desk Encyclopedia of General Virology (1st ed.). AcademicPress.

10. Wagner, E.K., Hewlett, M.J., Bloom, D.C., and Camerini, D. 2007. Basic Virology (3rd ed.). John Wiley &Sons.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

TECHNIQUES IN BIOLOGY (FCHC)

TotalCredit:04 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. This paper is designed to give a brief introduction to most of the techniques used in the field of biologicalanalyses
2. Nevertheless the topics in this paper are to be taughtcompendiously.
3. Techniques inBiology
4. The fundamental principles in cellhomogenization

Module I: Biological samples: Typesandpreparation 12 hours

Study Models: *In vivo* and *in vitro* models; Microbial, Animal, Plants; choice of models;types of studies, auxotrophs. Routes of exposure of test chemicals in animals. Culture: microbes, animal and plant cells inlaboratory.

Cell fractionation techniques: Tissue homogenization, Cell lysis techniques, extraction of cellcellularcontents. Protein purification techniques: salting in, salting out, dialysis and ultrafiltration.

Centrifugation: Svedberg's constant, sedimentation velocity and sedimentation equilibrium.

Ultra centrifugation: Differential and density gradient centrifugation, centrifugal elutriation, isolation of cell organelles (e.g. Mitochondria) from biological tissue samples.

ModuleII:Spectroscopicanalysis 12 hours

Principles and applications of colorimeter, spectrophotometer, fluorimeter, multiwell plate reader. Beer-Lambert's Law and its limitations. Extinction coefficient, chromogenic and fluorescent probes, their applications. Principle of flame photometry, and X-ray crystallography, IR, ESR,NMR& Raman's spectroscopy.

Module III: Chromatographic and electrophoretic techniques: 12 hours

Chromatography: Principles, working and applications of paper chromatography (radial, ascending, descending and 2-D), Thin layer chromatography,Brief introduction, application of Adsorption, Ion exchange, Gel filtration, Affinity, Gas chromatography. Chromatofocusing, HPLC, UPLC and FPLC.

Protein electrophoresis: Polyacrylamide gel electrophoresis, SDS-PAGE, IEF &2DEF.Visualizing proteins using CBB, silver stain;glycoproteinsand lipoproteins staining,Brief introduction to Zymogram and reverse zymogram; **Nucleic acid electrophoresis:** Agarose gel electrophoresis, Visualizing nucleic acids in using Ethidium bromide and UV. Fluorescence probes: SYBR green and Eeva green, Taq man, PFGE and capillaryelectrophoresis.

Module IV: Radiochemistry and Massspectroscopy 12 hours

Isotopes: Heavy isotopes and radio isotopes, half-life, decay constant, detection and quantitation; Principle and working of GM counter and scintillation counter (solid/liquid).

Mass spectroscopy Principle and construction of mass spectrometer. m/e, tof, MALDI and ESI. LC-MS, LC-MS-MS.

Applications of radioactivity: Radio isotopes in biology 3H, 14C, 32P, 131I,35S; Labeling of proteins and nucleic acids, autoradiography, pulse chase method, carbon dating.

REFERENCES:

1. Bryce, C., and Balasubramanian, D. 2004. Concepts in Biotechnology, UniversitiesPress.
2. Crueger, W., and Crueger, A. 2006. Biotechnology: A Textbook of Industrial Microbiology, Science publishers Ltd.,England.
3. Halford, N.G. 2003. Plant Biotechnology: The Genetic Manipulation of Plants: Adrian Slater, Nigel Scott, Mark Fowler; Oxford UniversityPress, Oxford, NewYork.
4. Marshall, A.G. 1978. Biophysical Chemistry: Principles, Techniques,and Applications: Wiley NewYork.
5. Micklos, D.A., and Freyer, G.A. 1990. DNA Science; A First Course in Recombinant DNA Technology: Cold Spring Harbor LaboratoryPress.
6. Purohit, S., and Mathur, S. 1999. Drugs in Biotechnology Fundamentals and Applications. Purohit SS. Maximillan Publishers,India.
7. Walker, M., and Rapley, R. 2009. Route Maps in Gene Technology, John Wiley &Sons.
8. Wilson, K., and Walker, J. 2010. Principles and Techniques of Biochemistry and Molecular Biology, Cambridge UniversityPress.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	2	3	3	3	3	3	3	3
CO4	3	3	3	3	2	3	3	3	2	3	3	3
Weighted Average	3	3	3	3	2.5	3	3	3	2.75	3	3	3

HARDCORE: MOLECULAR CELL BIOLOGY(FCHC)

TotalCredit:04 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. The Cellularorganization.
2. Study of phytochemicals in cancerbiology.
3. Signaling transduction in cells.
4. Structure and function of cell.

Module-I **12hrs**

Organization of the cell

Universal features of cells, Ultra-structure of prokaryotic and eukaryotic cells (Plants and animals), Structure of plant cell wall, Structure of cell membrane and models, functions of cell membrane, Intracellular organelles: Structure and functions of Ribosomes, Golgi apparatus; Mitochondria, Chloroplast, Lysosomes, Centrosome, Endoplasmicreticulum, Nucleus-Internal organization, Chromatin- structure and function, cellularcytoskeleton.

Module-II **12hrs**

Cellular processes

Cell cycle and its regulation, Cell cycle check points, Molecular dynamics of cell division, interphase, Mitosis and meiosis, Cyclins and CDKs, Cell differentiation: Stem cells, Differentiation of stem cells into different cell types and organization into specialized tissues, apoptosis, necrosis & autophagy Molecular mechanisms of membrane transport active, passive and facilitated, Receptor mediatedendocytosis.

Module-III **12hrs**

Cancer Biology

Introduction,Historical account, classification, Characteristics of cancer cells, hallmark features of cancer cells,Carcinogenesis, Exogenous and endogenous carcinogens, cancer initiation, promotion and progression, Cancer cell cycle, Viruses and cancer, Oncogenes, Tumor suppressor genes with examples, cancer

therapy present and future, Role of p53 in cancer. Role of phytochemicals in cancer treatment, cancer stem cells.

Module–IV **12hrs**

Basics of Signal Transduction

Extra-cellular matrix components, Cell junctions, Cell adhesion molecules, Hormones and their receptors, Cell surface receptors as reception of extra- cellular signals, Types of cell signalling, Growth factors- EGFR, VEGF, PDGF and theirSignalling, signalling through G-protein coupled receptors; Second messengers in signal transduction pathways: cAMP and calcium ions (Ca2+),

signalling through Receptor tyrosine kinases ,MAP kinase pathway,P13K -Akt pathway.

REFERENCES:

1. Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., and Walter, P. 2008. Molecular Biology of the Cell (5th ed.). New York: GarlandScience.
2. Lodish, H.F. 2016. Molecular Cell Biology (8th ed.). New York: W.H. Freeman.
3. Cooper, G.M., and Hausman, R.E. 2013. The Cell: a Molecular Approach. (6th ed.). Washington: ASM;Sunderland.
4. Hardin, J., Bertoni, G., Kleinsmith, L.J., and Becker, W.M. 2012. Becker's World of the Cell. Boston (8th ed.). BenjaminCummings.
5. Kleinsmith, L.J., and Kish, V.M. 1995. Principles of Cell and Molecular Biology (2nd ed.). Harper Collins College Publishers, New York,USA.
6. E-books

- https://cdn.preterhuman.net/texts/science_and_technology/nature_and_biology/Cell_and_Molecular_Biology/Molecular%20Cell%20Biology%205th%20ed%20-%20Lodish%20et%20al.pdf
- http://standring.weebly.com/uploads/2/3/3/5/23356120/8_-_unit_30c.pdf
- file:///C:/Users/Dr.%20Divya/Downloads/Cancer%20Biology%204th%20e d%20-%20R.%20Ruddon%20(%20PDFDrive%20).pdf

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	2	3	3	3	3	3	3
Weighted Average	3	3	3	3	2.75	2.5	3	3	3	3	3	3

SOFTCORE: ENVIRONMENTAL MICROBIOLOGY

TotalCredit:03 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. The evolution of life, microorganisms and soilinteraction
2. Adaptation ofmicroorganisms
3. The ecological succession of microorganisms and itsadaptation
4. Bioremediation concept ofmicroorganisms

Module-I **12hrs**

Introduction to Microbial Ecology: Evolution of Life on Earth; History and scope of ecology, Concept of autecology, synecology, population, community, biome. Ecological succession. Microorganism in aquatic Environment: major physical and chemical factors (light, temperature, gases, nutrients). Aquatic biota: phytoplankton, zooplankton, benthos, periphyton, macrophytes. Biofilms, Production in lakes, rivers, estuaries and wetlands. Nutrient dynamics in lakes, rivers, estuaries and wetland, Airspora of indoor and outdoor environment, factors affecting airspora, Techniques of trapping air bornemicroorganisms.

Module-II **12hrs**

Soil Microbiology: Characteristics and classification of soil. Interactions between microorganisms: Mutualism, commensalism, ammensalism synergism, parasitism, predation, competition. Rhizosphere, rhizosphere microflora and its beneficial activity. Role of microorganism in nitrogen, phosphorous and sulphur cycles. Detrimental effects of diverted biogeochemical cycles. Biological nitrogen fixation in detail: Symbiotic, asymbiotic and associated nitrogen fixation. Structure, function and gentic regulation of nitrogenases. Viable but nonculturable bacteria. Impact of crop residues burning on soil fertility and agriculturally important microbes

Module-III **12hrs**

Microbes in extreme environment: Microbes of extreme environments, Thermophiles, acidophiles, alkaliphiles, halophiles. barophiles and their survival mechanisms.

A) Space microbiology: Historical development of space microbiology, Life detection methods a) Evidence of metabolism (Gulliver) b) Evidence of photosynthesis (autotrophic andheterotrophic).

Module-IV **12hrs**

Microbes in the degradation of wastes: Treatment of solid and liquid industrial wastes,Microbialdegradationofpesticides,Xenobiotics,degradationoflignin, cellulose and pectin. Bioremediation. Geomicrobiology: Microbes in metal extraction, mineral leaching and mining, copper extraction by leaching and microbes in petroleum product formation. Global Environmental Problems: Global Warming, Acid rain, Ozone depletion. Biodeterioration of wood and metals.

REFERENCES:

1. Alexander, M. 1999. Biodegradation and Bioremediation. Academic Press,U.S.A.
2. Das, S. 2014. Microbial Biodegradation and Bioremediation (1st ed.). Elsevier academic Press,U.K.
3. Frederic, P.M., Agnes, F.V., and McBrewster, J. 2010. Bioleaching. VDM Publishing house,Mauritius.
4. Gabriel, B. 2005. Waste Water Microbiology. John Wiley & Sons publishers,U.K.
5. Nicholas, P., and Cheremisinof. 2002. Handbook of Water and Wastewater Treatment Technologies. Butterworth Heinemann Publishers, U.S.A.
6. Paulsen, Ian T., Holmes, and Andrew, J. 2014. Environmental Microbiology (2nd ed.). Springer-Verlag Berlin Heidelberg,Germany.
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8. Raina, M.M., and Ian, L.P. 2009. Environmental Microbiology (2nd ed.). Academic Press,U.S.A.
9. Singh, Ajay, Ward, and Owen, P. 2004. Biodegradation and Bioremediation, Springer- Verlag Berlin Heidelberg,Germany.
10. Singh, S.N. 2011. Microbial Degradation of Xenobiotics. Springer Heidelberg Dordrecht, London,U.K.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	2	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	2	3	3	3
Weighted Average	3	3	2.75	3	3	2.75	3	3	2.75	3	3	3

SOFTCORE:FUNDAMENTALS OF BIOCHEMISTRY(FCHC)

TotalCredit:03 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. The basics ofbiochemistry.
2. Lipids and metabolism
3. Importance ofbiochemistry.
4. Application of biochemistry knowledge in thesociety.

Module I: Basics of Chemical Bondingand Carbohydrates 18hrs

Bonding: Covalent bond; coordinate bond; coordinate bond formation in transition metals. Bonding of iron in hemologlobin and cytochromes, cobalt in Vit B_{12}, magnesium in chlorophyll. Special properties of water; Structure and bonding, non-covalent interactions, reactions ofcarbohydrates.

Carbohydrates: Structure and classification of carbohydrates, monosaccharides (pentoses, hexoses), disaccharides (lactose, sucrose, maltose) and polysaccharides (starch, cellulose, glycogen and bacterial cell wall polysaccharides)explanations.

Module II: Basics of Amino AcidsandProteins 10hrs

Aminoacids: Nomenclature, classification and buffering properties, zwitterionic structure,reactions ofAminoacids.

Proteins: Primary, secondary, tertiary and quaternary structures, protein sequencing.

Factors responsible for protein folding: Anfinsen's experiment. Non-covalent interactions and S-S bridges in stabilizing the proteins, Denaturation and renaturation of proteins, molten globule, chaperones.

Module III: Basics ofLipids&Enzymology 08hrs

Lipids: Classification & reaction of lipids; oils, fats, and waxes. Occurrence and properties of fatty acids, esters of fatty acids, cholesterol, phospholipids, glycolipids, sphingolipids, cerebrosides and gangliosides. Role in cellmembrane.

Enzymology:Classification, enzyme activity, Michaelis-Menten kinetics, LB plot, inhibition - competitive, uncompetitive, non-competitive, determination of Ki, active site, allosterism - ATCase, isoenzymes- LDH, catalytic strategies, co-enzymes and cofactors, multienzymecomplexes-PDC.

Module IV: Basics ofNucleicAcids 12hrs

Nucleic Acids: DNA as genetic material ,Griffith ,Avery & Macleod experiments , isolation of DNA & RNA from biological sources,secondary structure of DNA, Watson and Crick model,Chargaff's rule; B and Z DNA. Features of mitochondrial, chloroplast DNA and plasmids. Secondary structure of tRNA and clover leaf model. Physiochemical properties of nucleic acids, melting of DNA, T_m; factors affecting T_m, C_ot curve, classification of DNA based on $C_o$tcurve.

REFERENCES:

1. Bahl, A. 2010. Advanced Organic Chemistry; S. Chand & Company Limited.
2. Berg, J.M., Tymoczko, J.L., and Stryer, L. 2006. Biochemistry: International Edition: WH Freeman & CompanyLimited
3. Mathews, P. 2002. Advanced chemistry, Cambridge low price editions. Cambridge University Press,UK.
4. Morrison, R., and Boyd, R. 1992. Organic Chemistry (6th ed.). Englewood Cliffs, NJ: PrenticeHall.
5. Nelson, D.L., Lehninger, A.L., and Cox, M.M. 2008. Lehninger Principles of Biochemistry: MacmillanJ
6. Voet, D., and Voet, J.G. 2010. Biochemistry (4th ed.). New York: J. Wiley &Sons.
1. Videos for theconcept:

- www.khanacademy.org– Chemical Bonding, Chemistry ofBiomolecules
- www.yourgenome.org– Structure ofDNA

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	3	3	3	3	3	3
CO2	3	3	3	2	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	2	3	3	3
Weighted Average	3	3	3	2.5	3	2.75	3	3	2.75	3	3	3

PRACTICAL IA: (Techniques in Biology & Bacteriology & Virology)

Total Credit: 02 Total hours : 32

Course outcome: Students should study this paper to know –

1. *Structure and functioning ofviruses*
2. *Infectious cycle and replication pattern*
3. *The fundamental principles in cellhomogenization*
4. *The concept and working principles ofmicroscopes*

1. Laboratory safety rules
2. Isolation and enumeration of bacteria from soil and water
3. Staining techniques – simple (positive and negative), differential (Grams and acid fast), structural (endospore and capsule)
4. Motility test (hanging drop method and soft agar method)
5. Biochemical tests for the identification of bacteria – catalase, IMViC, Urease, TSIA.
6. TLC of amino acids.
7. Bacterial growth curve.
8. Diauxic growth curve in *E.coli*
9. Isolation of coliphages from sewage
10. Study of morphological changes due to viral infection in plants
11. Ascending chromatography
12. Descending chromatography
13. Circular paper chromatography
14. Wavelength scan of proteins and Nucleic acids

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	2.75	3	3	3	3	3	3	3	3

PRACTICAL IB: (Molecular Cell Biology & Environmental Microbiology)

Total Credit: 02 Total hours : 32

Course outcome: Students should study this paper to know –

1. *Phytochemical role in cellular process and cancerbiology*
2. *Importance of growth factors and cellularsignalling.*
3. *Importance of bioanalyticaltechniques*
4. *Techniques in Biology*

1. Microscopic examination of prokaryotic and eukaryotic cells using staining techniques.
2. Measurement of cell dimension by micrometery.
3. Cell Counting and viability by tryphan blue exclusion method.
4. Study of mitosis in onion root tips.
5. Study of meiosis in onion flower buds.
6. Polytene chromosomes.
7. Determination of BOD of pollution water.
8. Determination of COD of polluted water.
9. Degradation of cellulose by *Chaetomium globosum*.
10. Bacterial examination of drinking water by membrane filters technique.
11. Identification and study of soil associated Mycorrhiza.
12. Study of important microbes in the degradation of wastes.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	2	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	2.75	3	3	3	3	3	3	3	3	3

II SEMESTER

HARDCORE:MOLECULAR BIOLOGY(FCHC)

TotalCredit:04 **Total Hours: 48hours**

Course Outcome: After studying this paper the students will know –

1. To understand biological activities and metabolism at DNA and proteinlevel
2. The course gives an in-depth insight into the molecular aspects of life - the central dogma.
3. It explains molecular aspects of genes and its regulation- genome- gene expressions heredity- recombination- protein synthesis- molecular basis of diseases-mutationsgenetic analysisetc.
4. The student will get an idea about the principles behind molecularbiology

ModuleI: **08Hours**

1. **Genome organization:** Prokaryotic and eukaryotic genome organization, central dogma, structural organization of chromosome, structure and functions of DNA & RNA, Biochemical evidences for DNA as geneticmaterial.
2. **DNA**: Chemistry of DNA, Forces stabilizing DNA structure, Physical Properties of Ds DNA (UV absorption spectra Denaturation and renaturation), chemical that react with DNA, Interaction with small ions, DNA binding motifs: Zinc finger, leucine zipper, helix-turn-helix others motifs, DNA binding and kinks.

ModuleII: **12Hours**

1. **DNA topology:**Supercoiled form of DNA, Biology of supercoiled DNA, DNA topoisomerases, effect of supercoiling on structure of DNA and role of supercoiling in gene expression and DNAreplication.
2. **DNA Replication:** Characteristics and functions of bacterial DNA polymerases I, Mechanism of prokaryotic DNA replication, models of replications in prokaryotes. Fidelity of replication,Eukaryotic DNA polymerases and mechanism of replication. Replication of viral DNA, DNA replication in telomericregions,Telomerases,mechanismsofactionoftopoisomeraseIandII ,Models of DNA replication, Inhibitors of replication.

ModuleIII: **14Hours**

Transcription: Characteristics and function of bacterial RNA polymerases Eukaryotic RNA polymerases, mechanism of transcription and regulation. transcription factors, Stringent response. Post transcriptional modifications of mRNA mechanism of splicing ,Processing of tRNA and rRNA. Inhibitors of transcription. Mechanism of action of ribozymes ,

1. **Translation:** Structure and role of tRNA in protein synthesis, ribosome structure, basic feature of genetic code and its deciphering, translation (initiation, elongation and termination in detail in prokaryotes as well as eukaryotes), Post translational processing,Control of translation in eukaryotes (Antisense RNA, Heme andinterferon).

ModuleIV: **14Hours**

1. **Regulation of Gene expression in prokaryotes and eukaryotes:** Positive and negative regulation. lac-, ara-, his- and trp- operon regulation; antitermination,global regulatory responses; Regulation of gene expression in eukaryotes: Transcriptional, translational and processing level control mechanisms.
2. **Protein localization&Gene Silencing**: Export of secretory proteins- signal hypothesis, transport and targeting of proteins to mitochondria, chloroplast, peroxisomes, Gene Silencing: Definition, types, RNAi pathway, shRNA & CRISPR-CAS.
3. **Non coding RNA**: coding and non coding RNA, types of ncRNA : Short ncRNA(mi RNA,Sn RNA,Pi RNA,t-RNA & its fragments,SnoRNA)long ncRNA ,functional significance of ncRNA

REFERENCES:

1. Alberts, B., Bray, D., Lewis, J., Raf, M., Roberts, K., and Watson, J.D. 1994.Molecular Biology of the Cell (4th ed.). OxfordPress
2. Cooper, G.M. 1997. The Cell: A molecular approach (5th ed.). ASM Press,USA
3. Darnell, J., Lodish, H., and Baltimore, D. 1990. Molecular Cell Biology(3rd ed.). Scientific American Books Inc. pressNY.
4. Elliott, W.H., and Elliott, D.C. 2006. Biochemistry and Molecular Biology (3rd Indian ed.). Pub. OxfordPress.
5. Garrett, R.H., and Gresham, C.M . 1995. Molecular aspects of CellBiology(4t ed.).International edition, Saunders College Pubpress.
6. Karp, G. 1996. Cell and Molecular Biology concepts and experiments(3rd ed). John Wiley and Sons Inc. press.NY.
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8. Mathews and Ahern, V.H. 2000. Biochemistry. (3rd ed.). Pub Pearson educationpress.
9. Nelson, D.L., and Cox, M.M.2005. Lehninger- Principles of Biochemistry,4th edition Pub WH FreemanCo.
10. Old, R.W., and Primrose,S.B. 1993. Principles of gene manipulation .An introductionto genetic engineering Blackwell ScientificPublications.

1. Weblinks:

i. https://www.slideshare.net/ShobhaSurbhaiyya/gene-silencing-69645867.
ii. https://www.slideshare.net/lalvarezmex/dna-topology.

2. Research article:

i. Karakar, D and Ozpolat, B. 2021. The role of Lnc RNAsin Translation . Non coding RNA . 23:7-16.
ii. Anderson, P and Ivanov P . 2014. t RNA fragments in healthand disease ,FEBS letters 588:4297-4304.
iii. Mleczko, A.M ., Celichowski ,P., and Żywicka K.B, 2014. Ex- translational function of tRNAs and their fragments incancer,61(2): 211-216.
iv. Afonso A.P and Micro L .G. 2021. RNAs in the TFh regulation : Small molecules with big impact ,European Journal ofImmunology 51:292-295.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	2	3	3	3	3
Weighted Average	3	3	2.75	3	3	3	3	2.75	3	3	3	3

HARDCORE:GENETIC ENGINEERING(FCHC)

TotalCredit:04 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. The basics of Geneticengineering.
2. Basic principles of gene cloning and geneproducts.
3. Applied aspects of Geneticengineering
4. Importance of Recombinant DNA Technology.

Module-I **12hours**

Cloning and Expression vectors: Plasmids, lambda vectors, M13 Pha ge, cosmids,phagemids, Artificial chromosome vectors-YACs, PACs and BACs, plant and animal viruses as vectors, Transposons, Expression vectors- prokaryotic (pRSET, pET), eukaryotic (pcDNA3, pCEP), Baculovirus and Pichia vector system, plant based vectors- Ti and Ri, binary and shuttle vectors,Gene cloning: genomic cloning,c-DNAcloning,

Module-II **12hours**

Gene manipulation Restriction enzymes, restriction mapping, cloning in plasmid, Phage and cosmid vectors, insertion of foreign DNA into host cells- transformation, electroporation, Transfection transient and stable, screening methods for transformants, downstream processing of recombinant proteins, affinity tags- His-tag, GST-tag, MBP-tag, Fc-tag. Construction and screening of genomic and cDNA libraries, chromosome walking, Chromosome Jumping, BAC libraries and assembly of BACs intocontigs.

Module-III **14hours**

Gene analysis techniques

Hybridization techniques- Southern, Northern, South-western, Far-western, Colony hybridization, fluorescence *in situ* hybridization, molecular probes- preparation, labelling, amplification, applications, Polymerase chain reaction- Principle, primer designing, Types- RT-PCR, Realtime PCR, colony PCR, Multiplex PCR, Hot-start PCR, asymmetric PCR, Sequencing methods- chemical sequencing of DNA (Maxam and Gilberts methods andSangers dideoxy method), automated DNA sequencing, sequencing by DE-MALDI-TOFMS,microarray.

ChIP and Chip-on-chip techniques Chromogenic *in situ* hybridization, qPCR, next generation sequencing .

Module-IV **10hours**

Gene therapy, transgenics and Genome editing

Ex vivo and *in vivo* gene therapy, Vectors and other delivery systems for gene therapy, Invitro gene therapy, gene therapy of genetic diseases: eg.Neurologocal, metabolic disorders and cystic fibrosis, viruses for gene therapy- lentivirus, adenovirus. Gene targeting, knockout mice, genome editing by CRISPR-CAS

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CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	2.75	3	3	3	3	3	3	3	3	3	3

SOFTCORE: MICROBIAL PHYSIOLOGY

TotalCredit:03 **Total Hours: 48hours**

Course Outcome: After studying this paper the students will know –

1. This course deals with characteristics, properties and biological significance of the biomolecules of life.
2. In depth knowledge of the energetic and regulation of different metabolic processes I n microorganisms.
3. The student develops understanding of the laws of thermodynamics, concepts of entropy, enthalpy and free energy changes and their application to biological systems and various biochemical studies andreactions.
4. Conceptual knowledge of aerobic and anaerobic respiration and various intermediary mechanisms involved, oxidativephosphorylation.

Module-I **12Hours**

1. **Microbial Physiology**: Microbial Physiology: Role of ATP in metabolism. Microbial enzymes: Structure and Classification, Mechanism of Enzyme actions: Lock and Key model, induced fit Theory, Factors affecting rates of enzyme mediated reactions (pH, temperature and substrate and enzyme concentration), Enzyme Inhibition and Enzyme regulation- types ofenzymes

Module-II **12Hours**

A) **Metabolism of Carbohydrate**: Metabolism of Carbohydrate: Glycolysis, Citric acid Cycle and different types of Phosphorylation, Homo and Hetero Lactic Fermentation, Utilization of sugars other than glucose: Lactose, Galactose, Maltose, Mannitol. Degradation of cellulose, Starch and Glycogen (bioenergetics).

Module-III **12Hours**

Metabolism of other Substrates: Movement of Molecules: Facilitated transport, Channels, Carrier Proteins, Primary Active Transport, ABC Transporters, Siderophores, Group Translocation. **Lipid metabolism:** β- oxidation, Biosynthesis of fatty acids, degradation of fatty acids. **Nitrogen metabolism**: Nitrogen metabolism, Biological nitrogen fixation process, symbiotic and non symbiotic nitrogen fixation. Ureolytic bacteria and its fertility, degradation and biosynthesis of essential and non-essential amino acids. **Nucleic acid metabolism:** Biosynthesis and degradation of purines andpyrimidines.

Module-IV **12Hours**

A) Microbial Photosynthesis: Photosynthetic Pigments and apparatus in bacteria. Oxygenic andAnoxygenic. Photosynthesis. Autotropic CO2 fixation and mechanism of Photosythesis. Utilization of light energy byHalobacteria.

B) Autotrophic Mechanisms in bacteria: Hydrogen bacteria, Nitrifying bacteria, Purple sulphur bacteria,Non-sulfur bacteria, Green sulfur bacteria, Iron bacteria,Methylotrophs.

C) Microbial Stress Responses: Oxidative stress, Thermal stress, Starvation stress, Aerobic to anaerobictransitions. Biofilm and quorumsensing

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CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	2.75	2.75	3	3	3	3	3	3	3	3	3

SOFTCORE:MOLECULAR DIAGNOSTICS(FCSC)

TotalCredit:03 **Total Hours: 48hours**

Course outcome: Students should study this paper to know

1. The course focuses on learning and understanding how the various molecular techniques that were studied can be developed and utilized indiagnosis.
2. The course explains common analytical techniques and molecular techniques related to the development and use ofdiagnostics.
3. Students learn about the clinical applications of molecular diagnostic in patients with infectiousdisease.
4. The student will get an idea about the concept of molecular diagnosis and underpinning the successful application of gene therapy or biologic response modifiers as well theycan find their future focus in biotechnology companies developing and marketing Diagnostic kits.

Module-I **08hrs**

Introduction and History of diagnostics:

1. Introduction and History of diagnostics of diseases, mode of infection, types of infectious diseases, philosophy and general approach to clinical specimens. genetic basis of diseases, inherited diseases. Infection – mode of transmission in infections, factors predisposing to microbial pathogenicity, inborn errors ofmetabolism.

2. Traditional disease diagnosis methods: Diagnosis of infectious diseases caused by bacteria, fungi, viruses, protozoa and Helminthes, Philosophy and general approach to clinical specimens, Sample collection- method of collection, transport and processing of samples, Interpretation of results, Normal microbial flora of the human body, Host - Parasiterelationships.

Module-II **14hrs**

Molecular techniques for diagnosis

1. Basics and Implication of Molecular techniques in Genome resolution, detection and analysis of pathogen causing disease : PCR,Real-time; Multiplex; FISH; RFLP; DGGE; SSCP; Nucleic acid sequencing: new generations of automated sequencers; Microarray chips; EST; SAGE; microarray data normalization & analysis; molecular markers: 16S rRNA typing; MALDITOF- MS; Metabolite profile for biomarker detection the tissues in various disorders by making using LCMS & NMR technologicalplatforms.

2. Biochemical tests & Immunoassays: Detection and quantification of biochemicalparameters

Types: RIA,ELISA,Chemiluminescent IA, FIA and specific applications; Immunohistochemistry – principle and techniques. Different Levels of Biosafety, Containment.

Module-III **12hrs**

Major Metabolic & Genetic disorders:

1. Traditional methods for the diagnosis of metabolic errors(Diabetes Type 1 & Type 2, hyperthyrodis&Hypothyrodism). Disease due to genetic disorders(Sickle cell anemia& Cystic fibrosis).Identifying human disease genes., Methods available for the diagnosis of genetic diseases and metabolic disorders.Blood (formation, composition, function and

pathology of blood disorders (haemoglobinopathies,hemophilia), Muscle disorders (Duchene muscular dystrophy-DMD, Becker's muscular dystrophy-BMD, spinal muscular atrophy-SMA), Bonedisorders

2. (Osteogenesis imperfecta, Rheumatoid arthritis), Skin disorder (Muir- Torre *syndrome*), Eye disorder (Retinitispigmentosa).

3. Neonatal and Prenatal disease diagnostics. Gender identification using amelogenin gene locus. Amplification of Y chromosome specific Short Tandem Repeats (Y-STR). Analysis of mitochondrial DNA for maternal inheritance,Karyotyping& characteristics of Karyotyping.. Molecular diagnosis for early detection of cerebral palsy, Down syndromeetc.

Module-IV **14hrs**

Cancer diagnosis:

1. Molecular Oncology Tests, Analysis of the Expression of Multiple Genes and Cancer Prognosis, Analysis of Lymph Nodes to Detect Metastasis of Breast Cancer, Screening for Colorectal Cancer: Stool-Based DNA Screening, Leukemias and Lymphomas, DNA Methylation Tests and Cancer, Predicting Risk of DevelopingCancer.

2. Personalized Medicine: Pharmacogenomics and Companion Diagnostics, Cytochrome P450 and Drug Metabolism, Targeted Cancer Therapies and Companion Diagnostics Tests, Testing for HER2/neu Overexpression in Breast Cancer, Testing for Epidermal Growth Factor Receptor (EGFR), UGT1A1 Genetic Variants, Pharmacogenetics and Response to Antiretroviral Therapy, Thiopurine Methyltransferase and Metabolism of ThiopurineDrugs

REFERENCES:

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i. https://www.slideshare.net/Dentist_abdurrahman/genetic-disorders-47095869

ii. https://www.ihrp.uic.edu/files/4%20Screening%20and%20Diagnosis.ppt

2. Researcharticles:

i. Dermime, S. 2013. Cancer Diagnosis, Treatment and Therapy.M J CarcinogeneMutagene 14:1-3.

ii. Egger, G.,*etal*., 2004. Epigenetics in human disease and prospects for epigenetic therapy. Nature, 429:457-463.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

SOFTCORE:GENETICS

TotalCredit:03 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. The basics of genetictransmission
2. Study on microbial genetic factors andmutation.
3. Study ongenetic basis of sex determination and transposableelements
4. Mendel's Experiments and extra nuclearinheritance.

Module-I **14Hours**

History and developments of genetics. Principle of Genetic Transmission: Mendel's' Experiments, Symbols and terminology, Principle of dominance and segregation, Principle of independent assortment, Mendelian inheritance and probability (Multiplication and Addition rites). Extensions of Mendelian Principles:co-dominance, incomplete dominance, gene interactions, multiple alleles, lethal alleles, pleiotropy, penetrance and expressivity, polygenic inheritance, linkage and crossing over, sex linked inheritance, sex limited and influenced traits, genome imprinting, extra nuclear inheritance.

Module-II **12Hours**

Viral Genetics: Lytic and Lysogenic cycles, Phage Phenotypes, Phenotypic Mixing, Recombination and Mapping. **Bacterial Genetics:** Bacterial Transformation- Types of transformation mechanisms found in prokaryotes, Bacterial Conjugation- properties of the F plasmid, F^+x F^- mating, F' x F^- conjugation, Hfr conjugation. **Fungal Genetics:***Neurospora*- Tetrad analysis and linkage detection - 2 point and 3 point crosses, chromatid and chiasma interference, Mitotic recombination in *Neurospora*. **Algal Genetics:** *Chlamydomonas* - unordered tetrad analysis - Recombination and Mapping.Floral meristems and floral development in *Arabidopsis,* ABCmodel.

Module-III **12Hours**

Mutation and mutagenesis: Nature, type and effects of mutations. Mutagenesis – physical and chemical mutagens, base and nucleoside analog, alkylating agents, interrelating agents, ionizing radiation. Induction and detection of mutation in microorganisms and *Drosophila* . Site directed mutagenesis and its applications.

Recombination: Homologous and non-homologous recombination, Holliday model, site-specific recombination.

DNA Repair: Mechanism of genetic repair- direct repair, photoreactivation, excision repair, mismatch repair, post-replicative recombination repair, Repair of double-strand breaks, SOS repair.

Module-IV **10Hours**

Sex Determination-Sex chromosomes, Chromosomal and genetic basis of sex determination. Sex determination in *C.elegans*,*Drosophila*, human and Plant(*Melandrium*). Dosage compensation-Genic balance, Gene dose, Molecular basis of dosage compensation in Drosophila and man.

Transposable elements- discovery in maize and bacteria, transposal elements in bacteria and bacteriophage, types and functions; Transposable elements in eukaryotes- Plants, *Drosophila* and Humans, mechanisms of transpositions.

REFERENCES:

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17. Watson, JD., Baker, TA., Bell SP., Gann A., Levine M., Losick R. 2004. Molecular Biology of the Gene. 5th Edition. Publisher:Pearson Education Pte. Ltd., New Delhi,India.

18. Winchester, AM. 1969. Genetics. 3rd edn. Publisher: Oxford and IBH, NewDelhi.

1. Video links

- https://www.youtube.com/watch?v=L42IwtPC7eM
- https://www.youtube.com/watch?v=3VrGkCm4sT4
- https://www.youtube.com/watch?v=l-9iUpFGbxE
- https://www.youtube.com/watch?v=pdEgBMXJdeg
- https://www.youtube.com/watch?v=VIS_4G3Ysyk
- https://www.youtube.com/watch?v=TfBnfxm0Xyc
- https://www.youtube.com/watch?v=he260FUU5_M
- https://www.youtube.com/watch?v=BlnUNmfGn7I
- https://www.youtube.com/watch?v=o4yJF90OR9M
- https://www.youtube.com/watch?v=_cJfsWYR42M

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	2	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	2.75	3	3	3	3	3	3	3

PRACTICALS IIA:(Molecular Biology & Genetic Engineering)

Total Credit: 02 **Total hours: 32**

Course outcome: Students should study this paper to know

1. Makes students to understand the basic molecular tools and its application in basic research and applied research in various fields of lifesciences.
2. The fundamental cloningvectors.
3. Preparation of probes and its application in scientificfields
4. The course gives an in-depth insight into the molecular aspects of life - the central dogma

1. Estimation of DNA by diphenyl aminemethod.
2. Estimation of RNA by orcinolmethod.
3. Isolation of Genomic DNA from yeastcell
4. Determination of purity and concentration of isolated DNA using spectrophotometer and agarose gelelectrophoresis.
5. Determination of RNAse&DNAseactivity
6. Restriction digestion of plasmid andanalysis
7. DNAligation
8. Isolation of plasmids from bacteria by agarose gelelectrophoresis.
9. Preparation of competent *E. coli* cells for Bacterialtransformation.
10. Induction of gene expression and purification of the induced proteinfrom thehost.
11. Amplification, Purification and separation of PCRproduct.
12. Determination of Proteinase activity onproteins

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

PRACTICALS IIB:(Microbial Physiology & Industrial Microbiology)

Course outcome: Students should study this paper to know

1. Overview of major biomolecules: Classification, structure, function of carbohydrates, lipids, proteins, aminoacids, nucleicacids.
2. Discuss the biosynthesis and the degradation pathways involved in the physiology ofmicrobes.
3. Conceptual knowledge of properties, structure, function of enzymes, enzyme kinetics and their regulation, enzyme engineering, Application of enzymes in large scale
4. This course deals with characteristics, properties and biological significance of the biomolecules of life.

1. Population growth of yeast – *S. cerevisiae*.
2. Population growth of bacteria – *E coli*.
3. Sugar fermentation tests.
4. Catalase activity.
5. Hydrolytic rancidity.
6. Casein hydrolysis.
7. Carbohydrate catabolism by microbes
8. Study of acid and pH stress tolerance by microbes.
9. Effect of molecular oxygen on microbial growth.
10. Effect of relative humidity on microbial growth.
11. Effect of different wavelengths of light on microbial growth
17. The fundamental of recombination andmapping
18. Importance of chromosomal sex determination and transpositionmechanism
19. Importance of fungi as proteinssupplements
20. Genetic and physical maps, markers for genetic mapping.
21. Replica plating technique for transfer of bacterialcolonies.
22. Ultra-violet killing curve and determination of mutant types in*Saccharomyces cerevisiae.*
23. Induction ofmutation
24. Isolation of streptomycin resistant strain of *E .coli* by gradient platemethod.
25. Determination of chiasma frequency inonion.
26. To solve genetic problems on linkage, ordered and unorderedtetrads

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

OPEN ELECTIVE
MICROBES IN DAY TO DAY LIFE 36 h

ModuleI 12 h

Isolation and Identification of Microbes, Culturing of Microbes-Culture media, Types of culture media. Media for bacteria, fungi, algae and viruses. Pure culture techniques: Different types of inoculation methods-Spread plate, Pour plate and Streak plate methods. Economic importance of Microorganisms: Agriculture, Industry, Medicine, Environment.

ModuleII 12 h

Classification and general properties of microbes: Virus, Bacteria, Fungi, Algae and Protozoans. Distribution of microorganisms in soil. Role of Microorganisms in soil fertility. Microbial Interactions-mutualism, commensalism, competition, amensalism, parasitism, predation. Interactions between microbes and plants, Microbes and animals, Microbes and Humans.

ModuleIII 12 h

Bacterial diseases: Cholera, Typhoid, Tuberculosis, Salmonellosis, Anthrax, Shigellosis, Fungal Disease; Candidiasis, Dermatitidis, Aspergillosis, Mycotoxicosis, Viral Diseases: AIDS, HIV, Rabies, Hepatitis, Poliomyelitis, Small pox, Chicken pox. Control of microbes-Sterilization, disinfection, antiseptic, pasteurization, radiation, chemical-phenol and phenolic compounds.

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CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	2	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	2.75	3	3	3	3	3	3	3	3	3	3

III SEMESTER

HARDCORE: MEDICALMICROBIOLOGY

TotalCredit:04 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. Basis of microbialinfection
2. Mode of action of drugs onmicrobes
3. Diagnosis of microbial infectiousdiseases
4. Transducing signals in host

ModuleI **10hours**

A) Introduction to Medical Microbiology: History, Development and scope of Medical Microbiology. Concept of Disease, disorder, syndrome, Communicable diseases-Microbial infections and diseases. Factors responsible for microbial pathogenicity.

B) Microbial infections**:** Types of infections, modes of transmission, portal of entry: Urinary tract infection, sexually transmissible infection, Infection of the central nervous system, Infections of circulatory system, Oral cavity and respiratory infection, gastrointestinalinfection.

ModuleII **14hours**

A) **Nosocomial infection:** Incidence of nosocomial infections, types of nosocomical infections, emergence of antibiotic resistant microorganisms, hospital infection control programmes, preventing nosomical infections and surveillance, General concepts for specimen collection and handing of specimen, specimen processing andbiosafety.

B) Chemotherapeutic agents**-**antibiotics (Classification based on chemical structure, mode of action and range of effectiveness). Recent trends-Drug resistance and its consequences, antibiotic policy, NCCLS (CLSI) guidelines and standards, WHOguidelines.

C) G protein signaling-Establishment, spreading, tissue damage and anti- phagocytic factors; Evasion of host defense, non-specific host defense, toxigenesis-bacterial toxins and its types, Significance of quorum sensing in Gram positive and Gramnegative.

ModuleIII **12hours**

A) Epidemiology, Pathogenesis, Spectrum of disease, Laboratory diagnosis and Prevention**:** Diseases caused by Viruses: Chicken pox, Rabies virus, hepatitis, encephalitis, AIDS, Herpes simplex infections, Influenza,Dengue

B) Diseases caused by Bacteria: Tuberculosis, Leprosy, cholera, Typhoid, Botulism, Shigellosis, Helicobacter pylori infection, Salmonellosis, Tetanus. Diseases caused by Fungi: Candidiasis, Histoplasmosis, Blastomycosis, Coccidiomycosis, Dermatomycosis, Aspergillosis and Cryptococcosis,Anthrax

ModuleIV **12hours**

a. Diseases caused by Mycoplasma: *Mycoplasma pneumoniae, M. urealyticum, M.homonis*.

b. Diseases caused by Protozoa: Giardiasis, Trichomoniasis, Celebral Malaria, Toxoplasmosis,Cryptosporidium.

c. Disease caused by Chlamydiae: Psittacosis, Lymphogranuloma Venereum, Trachoma and Inclusionconjunctivitis.

d. Emergent Diseases: Hemorrhagic fever, Swine flu, SARS, Chikun gunya, Ebola, Hanta, Leptospoirosis, Marburg virusdisease

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CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO 12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

Semester III: FCHC

IMMUNOLOGY (FCHC)

Total Credits: 04Total Hours:48hours

Course outcome: Students should study this paper to know –

1. Role of immune system in maintaininghealth
2. Cellular and molecular basis of immuneresponses
3. How immune responses are triggered andregulated
4. Organs, tissues, cells and molecules of the immunesystem

Module-I **14Hrs.**

a) Over view and Types ofimmunity:

Innate immunity: anatomic barriers, physiologic barriers, phagocytic barriers, microbial antagonism, acute phase reactants, anti-microbial peptides, interferons, inflammation, Pattern Recognition Receptors (PRRs), Pathogen Associated Molecular Patterns (PAMPs) and Damage Associated Molecular Patterns (PAMPs). Complement system: components, pathways of activation and biologicalconsequences.

Acquired immunity: Active (Naturally acquired and artificially acquired), Passive (Naturally acquired and artificially acquired), Adoptive immunity, Humoral and Cell mediated immune response

b) Tissues of immune system: Structural organization and functions of Lymphatic system, Primary lymphoid organs (Bone marrow, Thymus) Secondary lymphoid organs and tissues (Spleen, Lymph node, Tonsils, Adenoids, Peyer's patches, Lamina propria, Mucosa-associated lymphoid tissue, Gut-associated lymphoidtissue).

c) Cells of the immune system: Hematopoiesis, Biology, Development and Functions of PMNLs, NK cells, Macrophages, T-Lymphocytes, B-Lymphocytes, Dendriticcells

Module-II **12Hrs**

a) Antigens, and Antibodies: Antigens, Immunogens and Haptens, Factors influencing immunogenicity, adjuvants, epitopes, Structure and functions of immunoglobulins, Synthesis of immunoglobulins, Genetic basis of immunoglobulindiversity.

b) MHC molecules: Types, structure, diversity andfunctions

c) Antigen recognition: Thymus dependent and independent Antigens, Clonal selection and immunological memory of B and T cells, Antigen processing and presentation (Endogenous pathway, Exogenous pathway, Cross presentation),Superantigens.

d) Monoclonal Antibodies: Hybridoma technology and production of mAbs, types, and applications. Advantages and disadvantages of mAbs intherapy.

Module-III **12Hrs**

a) Immune System in Health and Disease: Immunological Tolerance and Autoimmunity, Autoimmune Diseases (Organ specific autoimmune diseases-Graves' disease, Myasthenia Gravis, Systemic autoimmune diseases-Multiple Sclerosis, Rheumatoid Arthritis, Systemic Lupus Erythematosus), Immunosuppression, Hypersensitivity (Type I, II, III &IV).

b) Vaccines and Vaccination: Principles of vaccination, Immune response to vaccines (Primary and Secondary response), Whole-Organism vaccines, Purified macromolecules as vaccines, Recombinant vaccines, DNA vaccines, Multivalent subunit vaccines and Edible vaccines, Vaccine safety, Reverse vaccinology. Overview of COVID-19 vaccines.

c) Primary & Secondary Immuno-DeficiencyDisorders:

Primary: Wiscott-Aldrich syndrome, Severe combined immunodeficiency disease (SCID), DiGeorge syndrome, Ataxia-telangectasia, Leucocyte adhesion defects, Chronic granulomatous disease, X-linked agammaglobulinemia, Complement deficiencies. Gammopathies (Multiple myeloma).

Secondary: AIDS, Malnutrition, Drug regimen, Diabetes, Chronic infection.

Module-IV **10Hrs.**

a) **Clinical Immunology**: **Transplantation of tissues and organs:** Nomenclature of transplantations, Transplantation reactions, HvG and GvH. Exception from rejections, Major and minor blood groups, Blood transfusion, tissue typing, Kidney and bone marrow transplantations. Immunosuppressive drugs. **Tumor immunology**: Neoplasms, tumor-associated antigens, immune response to tumor antigens, immunologic factors favoring tumor growth, immune surveillance,Tumor necrosis factor α and β.Metastatic processes, Immunodiagnosis, Antitumour drugs,Immunotherapy.

b) **Immunological Techniques:**. *In vitro* antigen-antibody reactions, serotyping, agglutination, complement fixation, immunoprecipitation, Immunodiffusion, ELISA, RIA, IHC,Immunoelectrophoresis.

REFERENCES:

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Videos on Immunology: www.imm.ox.ac.uk - from University of Oxford

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	2.75	3	3	3	3	3	3

SOFTCORE: FOOD MICROBIOLOGY

TotalCredit:03 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. Basis of food bornemicrobes
2. Nutritive value of foods/Nutraceuticals
3. Food bore pathogendetection
4. Expertise in detecting foodpoisoning

ModuleI **12hours**

A) Introduction to food microbiology: Definition, concepts and scope. Food as substrate for microbes. Factors influencing microbial growth in food-Extrinsic and intrinsic factors. Principles of food preservation-Chemical preservatives and Food additives Asepsis-Removal ofmicroorganisms.

B) Contamination and food spoilage: fruits/ Vegetables, meat and meat products, Fish and sea foods spoilage of cannedfoods

Module II **12hours**

A) Dairy Microbiology: Microbiology of raw milk, Milk as a vehicle of pathogens, Prevention of contamination of raw milk, Microbiology of processed milk, Spoilage and defects fermented milk and milk products, Microbiological standards for milk and milk products. Cream and butterbacteriology.

B) Probiotics: definition, types, properties, microbial group. Prebiotics: synbiotics and neutraceuticals, Taxonomy of Lactobacilli and Bifidobacteria, The Microecology of Lactobacilli in the Gastrointestinal Tract, Exopolysaccharide Production by IntestinalLactobacilli

Module III **12hours**

A) Food poisoning and intoxication: Significance of food borne diseases, Staphylo Food poisoning and intoxication: Significance of food borne diseases, Staphylococcal, Gasteroenteritis and enterotoxins: Types and incidence, Prevention of Staphylococcal and other food poisoning syndromes, *Clostridium perfringens* food poisoning and Botulism, *Bacillus cereus* food poisoning, Food borne Listeriosis by *Listeria monocytogenes*, Food borne Gastroenteritis by *Salmonella* and *Shigella, Vibrio, Campylobacter* and *Yersinia*, fungal spoilage andMycotoxins.

B) Food produced by Microbes: Microbial cells as food (single cell proteins) – mushroom cultivation. Bioconversions- production of alcohol-fermented beverages- beer and wine. Genetically modified foods. **Application of fungal pigments in food industry**

ModuleIV **12hours**

A) Detection of food-borne microorganisms: Culture, Microscopic and Sampling methods.. Chemical: Thermostable nuclease *Limulus* Lysate for Endotoxins, Nucleic Acid (DNA) probes, DNA Amplification (PCR), Adenosine- Triphosphate Measurement, Radiometry, Fluoro-and Chromogenic substrates. Immunologic Methods:

Fluorescent Antibody, Enrichment Serology, Salmonella 1-2. Test, Radioimmunoassay,ELISA.

B) Microbial indicators of food safety and quality control: Principles of quality control and microbiological criteria, Indicators of product quality and microbiological safety of foods, Food safety laws and standards, international – HACCP, ISO 9000 Series, GMP and LP, India – PFAA, FSSAI, FPO, MPO, CSO, the Agmark Standards, bureau of Indian Standard (BIS). Food testing laboratories in India SRI,FRAC.

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CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	2	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	2.75	3	3	3	3	3	3	3

SOFTCORE:AGRICULTURAL MICROBIOLOGY

TotalCredit:03 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. This paper of microbiology and biochemistry of soil is designed with the objective to provide general introduction of soil and in depth information on soil microbial diversity and the role of microorganisms in biogeochemical cycling of elements like C,N,P and trace elements and soilfertility.
2. The importance of physical, chemical and biological properties ofsoil.
3. Role of microorganisms in biogeochemicalcycling.
4. Microbiology and physiology of degradation of native and organic matter and Nitrogenfixation.

ModuleI **12hours**

A) Introduction to Agricultural Microbiology:, Introduction to agricultural microbiology, concepts and scope of agricultural microbiology, Agronomy and production of important crop plants, Green revolution. Plant Pathology: Concept of disease, History of Plant Pathology, Significance of plant diseases, Symptoms and types of plant diseases, Kochrules

B) Transgenic Resistance: Gene-to-gene resistance (horizontal and vertical), functions of plant resistance genes, Resistance to viruses, fungi, bacteria and insects.

ModuleII **12hours**

A) Parasitism and Disease Development Parasitism and pathogenecity, Host range of pathogens, Disease triangle, Diseases cycle / Infection cycle, Relationship between disease cycles and epidemics; Pathogens Attack Plants – Mechanical forces, Microbial enzymes and toxins, Growth regulators. Effect on physiology of Host – Photosynthesis, Translocation and transpiration, Respiration, Permeability, Transcription and translation. Environment and Plant Disease– Effect of Temperature, Moisture, Wind, Light, Soil, pH and structure, Nutrition andHerbicides.

B) Defense Mechanisms of Plant: Disease Pre-existing structural and chemical defenses, Induced structural and biochemical defenses. Microbe mediated strategies for abiotic stressmanagement.

ModuleIII **10hours**

A) Disease & their management: Tobacco Mosaic Disease, Sandal Spike Disease, Bacterial blight of Paddy, Citrus canker, Angular leaf spot of cotton, Late Blight of Potato, Downy Mildew of Bajra,

B) Poultry: E.Coli infections, salmonellosis, Avian, Mycoplasma, Infectious Bursal diseases, Aflatoxicosis, Candidiasis,

C) Disease of cattle and sheep: Anthrax, Foot and Mouth disease, Brucellosis, Mastitis, Tick feaver, Bovine babesiosis

ModuleIV **14hours**

A) Microbes and Plant interaction-Mycorrhizae-Biology and their applications, Biofertilizers - microbial inoculants. Production and application of *Rhizobium, Azospirillum, Azotobacter,* phosphor bacteria and Cyanobacteria. PGPR's plant growth promoting *Rhizobacteria* and their uses.

B) Biological nitrogen fixation(BNF): Nitrification, denitrification; symbiotic nitrogen fixation (Rhizobium, Frankia), non-symbiotic nitrogen fixation (Azotobacter, Azospirillum); Nitrogenase enzyme, nif genes and molecular mechanism of nitrogen fixation. Role of nodulin genes in nodule development and symbiosis. Genetic engineering ofBNF

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CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	2	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	2.75	3	3	3	3	3	3	3	3

SOFTCORE: MYCOLOGY

TotalCredit:03 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. Basis of fungaltaxonomy
2. Fungal characteristics' and its economicimportance
3. Expertise in detecting fungalidentification
4. Interaction of fungus with differentcommodity

ModuleI **12 hours**

A) Introduction: History and Development of Mycology, scope ofmycology. Recent developments inMycology.

B) Fungal taxonomy: Taxonomic problems associated with variationin fungi, Classification of fungi(Alexopoulos andMims).

ModuleII **12hours**

A) General characteristics of fungi and reproduction: Morphology and somatic structures: The thallus,organization, fungal cell, nuclear components, specialized somatic structures; Aggregation of hyphae, tissues, mycangia, General aspects of fungal nutrition and reproduction (Asexual, Sexual reproduction, Heterothalism andParasexuality)

B) Growth in Fungi and hyphal tropism: Mechanism of apical growth, **Hyphal tropisms: Spore tropisms,Phototropisms, Sexual tropisms**

ModuleIII **12hours**

A) **Human diseases:** Ringworm, athlete's foot, onychomycosis Infection. Animal Diseases: *Aspergillosis, Mucormycosis,candidiasis*

B) **Plant diseases:** Chytridiomycota, Zygomycota, Basidiomycota, Ascomycota,Deuteromycota, Oomycota,. Symbiotic fungi-Lichens.

ModuleIV **12hours**

A) Economic importance of fungi: Fungi as biocontrol agent, Economic importance of Fungi inAgriculture, Industry and medicine. Fungi as SCP, Fungi as parasites of human and plants. Role of fungi in bio deterioration of wood and paper. Mycorrhiza – ectomycorrhiza, endomycorrhiza, vesicular arbuscular mycorrhiza. Fungi as insect symbiont.

REFERENCES:

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CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	2	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	2.75	3	3	3	3	3	3	3	3

SOFTCORE: GENOMICS AND PROTEOMICS

TotalCredit:03 **Total Hours: 48 hours**

Course outcome: Students should study this paper to know

1. The concepts of genome, genome sequencing and genome mapping
2. The knowledge about structural and functional proteomics
3. Next generation sequencing, Human Genome Project.
4. Understanding about the mass spectra analysis.

Module-I **10 hours**

A) **Genome -** Overview Of Genome; Sequence Of Genome Acqusition And Analysis - Homologies - Snps -Genetic Analysis, LinkageMapping,

B) **High Resolution Chromosome Mapping And Analysis** - Physical Mapping, Yac, Hybrid Mapping, Strategies, Sequence Specific Tags (Sst), Sequence Tagged Sites(Sts), Ish, Fish, Rflp,Rapd.

Module-II **12hours**

A) **DNA Sequencing** - Methods, Maxam And Gilbert Method, Ladder, Fluorescent, Shot Gun, Mass Spectrometry, Automation Sequencing – Find Gene Mutations, Implications of DNA – Sequencing And Sequencing Genomes.

B) **Genome Data Bank, Metabolic Pathway Data** - Construction And Screening Of cDNA, Libraries And Microarrays - Application Of DNA Arrays - PCR - Variations In PCR - Gene Disruptions – Sage And Sade Pharmacogenomics

Module-III **12hours**

A) **Protein Sequence Analysis** - Introduction - Sequence Data Banks - Wbrf – Pir - Swissport - Databases, Data Mining - Algorithms Of Proteomics And Its Applications - ProteinExpression

B) **Profiling -** Protein - Protein Interaction - Protein Modifications.Automation - Nucleic Acid Data Bank – EMBL Nucleotide Sequence Data Bank - Aids Virus Sequence Data Bank - RNA Data Bank.

Module-IV **14hours**

A) **Tools For Data Bank** - Pairwise Alignment - Needleman And Wusch Algorighm – Smith Waterman - Multiple Alignment - Clustral - Pras -Blast - Fast, Algorithms To Analyse Sequence Data - Pdb, Cambridge Structure Data Base (Lsd), 2d Electrophoresis, IEF, HPLC, Protein Digestion Technique, Mass Spectrometry, MALDI-TOF, Peptides, Mass Finger, Printing, Protein.

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CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	2	3	3	3	3	3	3
CO2	3	3	3	3	3	2	3	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	2	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	2	3	3	3	3	3	3

PRACTICALS IIIA: (Immunology & Medical Microbiology & Food Microbiology)

Total Credit: 02
Total hours: 32

Course outcome: Students should study this paper to know

1. The immunological methods used to detect the disease
2. How the knowledge of immunology can be transferred into clinical decision-making through case studies prese class
3. Interaction of microbes with different food commodity the role of molecular markers in comparative genomics

1. Slide agglutination test/ Bloodgrouping.
2. Immunoprecipitation test- Ouchterlony doublediffusion.
3. ELISA for quantification of anantigen.
4. Western blotting anddetection.
5. Clinical laboratory visits
6. WIDAL Test,VDRL Test (RPR), HCG test Agglutination inhibitiontest). CRP test, ASO Test (Anti streptolysin 'O'Test
7. Detection and enumeration of Microorganisms present in Utensils and cannedfood.
8. Enumeration of bacteria in raw and pasteurized milk by SPCmethod.
9. Determination of quality of a milk sample byMBRT.
10. Litmus milk test.
11. Microbiological examination of Ice-cream and Dairyproducts
12. Pathogenic fungi of the skin(Dermatophytes).
13. Microbial flora of mouth – teeth crevices, Microbial flora ofsaliva.
14. Estimation of bacteria in urine by calibrated loop direct streakmethod.
15. Animicrobials assay-sensitivity (MIC) for pathogenic bacteria

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

PRACTICALS IIIB : (Mycology and Agricultural Microbiology)

Total Credit: 02
Total hours: 32
Course outcome: Students should study this paper to know

1. Isolation of slimemolds.
2. Isolation of aquaticfungi.
3. Isolation of soilfungi.
4. Isolation of fungi fromair.
5. Isolation of fungi from cereals and cereal basedproducts.
6. Study of the following representative genera: *Aspergillus, Penicillium, Fusarium, Neurospora, Saccharomyces, Erysiphae, Polyporus, Agaricus, Puccinia, Ustilago, Alternaria, Drechslera, Saprolegnia, Rhizopus, Trichoderma* and symbiotic fungi- Lichens.
7. Measurement of concentration of fungal conidia byHaemocytometer.
8. Measurement of fungal cells byMicrometer.
9. Isolation, culturing and seed inoculation of *Rhizobium* and testing of nodulation ability and beneficial effects.
10. Isolation and testing the efficiency of various biofertilizers like *Rhizobium, Azotobacter, Azospirillum*.
11. Mass multiplication techniques of *Azolla.*
12. Estimation of total phenols in diseased and healthy plant tissues.
13. Seed health testing by SBM.
14. Collection and Identification of following disease: Tobacco mosaic disease, Bunchy top of Banana, Bean Mosaic, Sandal spike, Bacterial blight of paddy. Citrus canker, Downy mildew of Bajra, Powdery mildew of mulberry, Head smut of sorghum, Leaf rust of coffee, Blast disease of paddy, Tikka disease of groundnut, Leaf spot of paddy and Grassy shoot of sugarcane.

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

IV SEMESTER

SOFTCORE: INDUSTRIALMICROBIOLOGY

TotalCredit:03 **Total Hours: 48hours**

Course outcome: Students should study this paper to know –

1. Industrial microbiology & fermentation contains improved biochemical or physiological fermentation are mainly carried out by fungi and bacteria on large scale to produce commercialproducts.
2. The main objective of industrial fermentation is to produce highest quality and quantity of particles produce bycombining.
3. Microbes involved infermentation.
4. The basics of fermentationtechnology.

ModuleI **12hours**

A) **Introduction: Fermenter design and types of fermenters, achievement and maintenance of aseptic conditions,** Types of fermentation processes (Surface, submerged, Batch, Continuous, solid-substrate, Dual, Fed batch fermentation and itsapplications),

B) **Industrial Microorganisms:** Screening, Isolation. Identification and characterization o**f** industrially important microbes. Strain improvement- mutation, recombination- gene regulation and genetic manipulation. Preservation of industrially important microbes. Culture collectioncentres**.**

ModuleII 12**hours**

A) Media for Industrial Fermentations: Media formulation, growth factors, carbon, nitrogen, Energy and Mineral sources, buffers, inhibitors, precursors, inducers, Oxygen requirements Antifoam agents and others, Sterilization: Sterilization of bioreactor, media, air and exhaust air and filtersterilization

B) Downstream processing and fermentation economics: Steps in recovery and purification Methods of cell separation – filtration and centrifugation, cell disruption, liquid liquid extraction, chromatography, membrane processes. Fermentation economics-expenses for industrial organisms, strain improvement, media sterilization, heating, cooling, aeration and agitation. Cost of Plant and equipments, batch process cycle time, continuous culture, recovery and effluent treatment, cast recovery due to waste usages andrecycling.

ModuleIII 12**hours**

A) Industrial production of energy fuels: Industrial alcohol production: Biosynthesis, methods of production, recovery and applications of ethanol, acetone –

butanol and glycerol through microbialprocess.

B) Industrial production of Organic acids and Enzymes: biosynthesis, media, production process, product recovery and application of citric acid and lactic acid, Enzymes: Fungal and Bacterial Amylase; Bacterialproteases.

ModuleIV **12hours**

A) **Industrial production of food additives:** amino acid production, methods of production, product recovery of L-Glutamic acid and L-lysine (scaling downstream technique). Commercial uses of Amino acids Vitamins: Commercial production of Vitamin B12, and Riboflavin. Alcoholic beverages (Beer,Wine)

B) **Industrial production of health care product:** Penicillin and Streptomycin: Biosynthesis, production andrecovery.

C) **I P R: Patent Laws:** Patent regulations of processes, productsand microorganisms.

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CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	2	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	2.75	3	3	3	3	3	3	3	3

HARDCORE: Research Project Work, Report and Viva Voce

Credit: 07

Course outcome:

1.Students will able to choose an appropriate topic for study and will able to clearly formulate and state research problems

2. Students will be able to complete the relevant literature and frame hypothesis for research

3.Students will able to plan research design

4.Student will able o compile relevant data, interpret and analyze it and test the hypothesis where ever applicable

5.Students will able to defend his /her work in front of a panel of examiners

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	2.75	3	3	3	3	3	3	3	3	3